approach

MARCH 1982 THE NAVAL AVIATION SAFETY REVIEW

FOD INJECT

By CWO2 Robert O'Hara
VAW-113

It is not just engine-connected trouble (read with one eye closed).

HI. Remember me?

No? Let me refresh your memory just a bit. We were together on the first FOD walkdown of the day – up on the bow. You were talking with a buddy about your last liberty and thought I was too small to damage an engine, so you didn't interrupt your tale to pick me up.

When the *Hummer* was launched, I managed to travel aft to the bow weapons elevator. I stayed there until Event 3, when an F-4 sent me to the PLAT deck camera.

You stepped on me during the midday FOD walkdown and "freed" me from the PLAT so I could continue my odyssey. An A-6 got me to the 4 wire and I rested just aft of the crossdeck pendant through the next FOD walkdown.

Yes, I saw you again – you were watching an A-7 fly by and passed within 6 inches of me. Since you'd "walked" the area, everyone thought it was clear of me and any other debris. If only they knew. If only you knew then what I'm telling you now.

During the Event 6 launch we met. An F-8 was on the waist cat; you were aft trouble-shooting your bird. When the F-8 went into afterburner, I got another "lift" and you looked up. Nothing guarantees your goggles will stop me and my kind, but they help. Yours were on the top of your helmet where they couldn't stop a thing. Nothing impeded my getting your attention this time. You became aware of my existence.

The doctors hope the eye surgeons in CONUS will be able to remove me, but hold out no hope for your vision in that eye. You had three opportunities to pick me up during the day. You also had a chance to prevent my being around in the first place. Do you remember changing a tire early this morning? Remember the safety wire you cut off, but didn't pick up? Said I was too small to worry about. Allow me to introduce myself. I'm FOD-INJECT.

approach

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The USS KENNEDY moves powerfully through the North Atlantic. Photo by PH1 Floyd Osborne.

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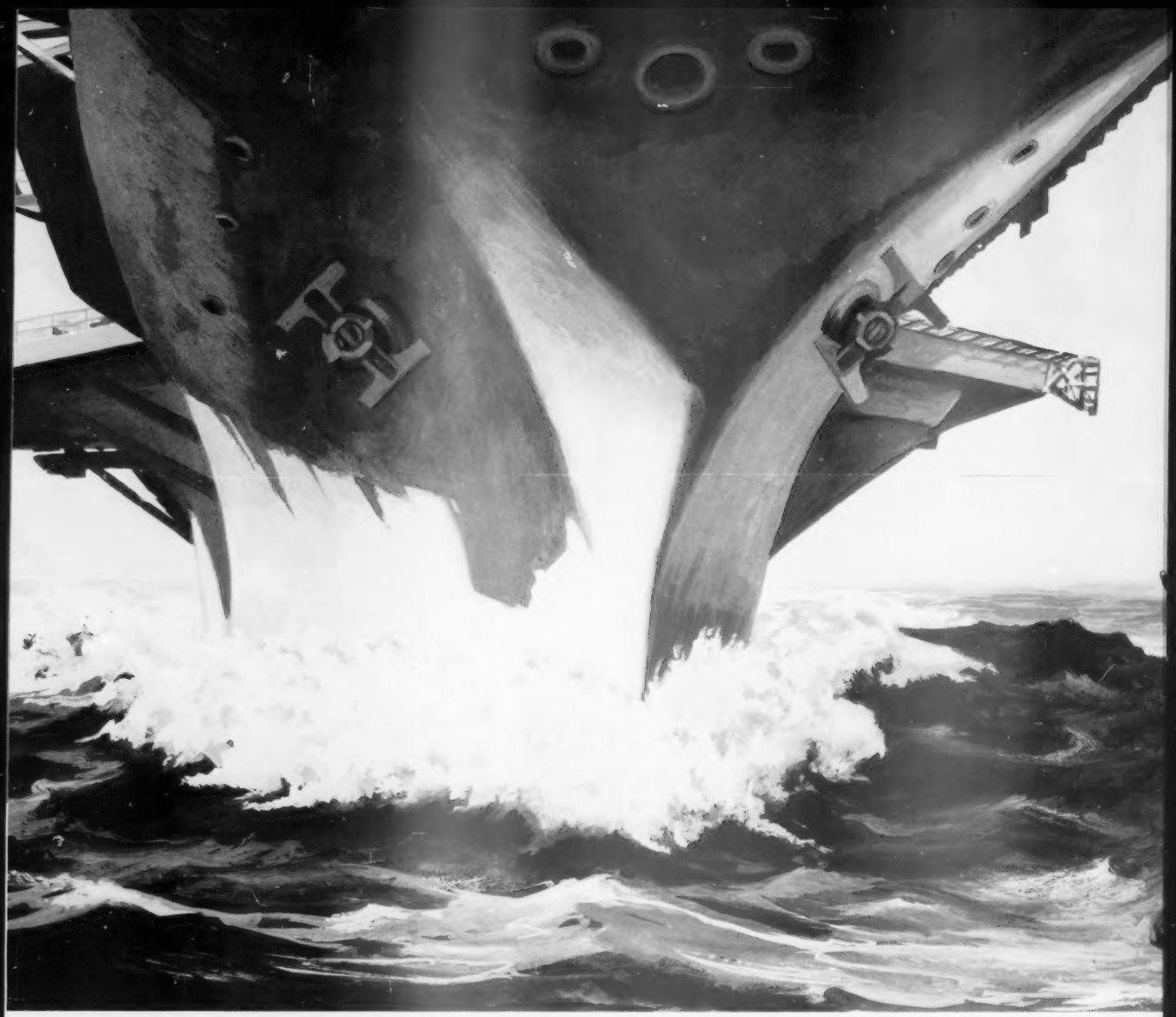

A lesson worth learning

By LTJG Frank McClellan
VF-151

IT all began at a squadron AOM. We were debriefed on a recent A-6 unsuccessful cat shot which resulted in two fatalities. The debrief was given by the SAR aircrewmen who participated in the attempt at recovering the ill-fated aircrew. What they presented not only painted a bleak picture of the hazards of ejecting in the path of the ship, but also proved to be very thought provoking. The A-6 crew successfully ejected and inflated their LPAs; they signaled "thumbs-up" to the flight deck and helo crews as they floated alongside the ship. Immediately after the ship passed, both aircrewmen were pulled under by the ship's screw turbulence. The SAR helos were positioned for an expeditious pickup, but that made no difference. The SAR swimmer described how the BN was pulled under, never to surface again. He saw him about 30 feet down and descending. The pilot had a little lateral separation on the ship, but he was also pulled under. With much assistance from a second SAR swimmer, the

pilot was pulled to the surface. They remained there momentarily, but then both were pulled under a second time. While clawing for the surface in a state of panic the pilot finally went limp. The swimmer, in the meantime, was desperately attempting to get him to the surface. The SAR crew managed to recover the pilot, but he never regained consciousness.

The sole factor which caused these tragic results was that neither aircrewman successfully divested himself of his parachute. Both men failed to assess the imminent danger of shroudline entanglement while getting caught in the screw turbulence of an aircraft carrier. Eyewitnesses stated neither man made any apparent attempt to rid himself of his parachute. The SAR debrief was intended to get air wing personnel thinking, so that a similar situation wouldn't be repeated.

The debrief generated much conversation regarding water entry procedures, shroudline entanglement and parachute divestment, and the dangers of screw turbulence. A general agreement was reached within the squadron that there wasn't sufficient time to perform a complete IRSOK (*I*nflate *R*aft, *S*nap LPA lobes, *O*xygen mask, *K*och fittings) procedure when faced with an ejection right off the cat. The minimum survival procedures paramount to survival would be Inflate, Koch (IK). When to release the parachute Koch fittings came under examination; the SAR specialists recommended release as the feet hit the water. The question was raised, "Would it be recommended to release the Koch fittings above the water in an ejection off the cat scenario?" The question was prompted by the fact that historically an aircrew would get one or possibly two swings in his chute prior to water entry. It seemed to me it would be less dangerous to fall 15-20 feet to the water than to suffer the consequences of shroudline entanglement and getting caught in the ship's screw turbulence. Nevertheless, the overwhelming consensus in the readyroom was that releasing the Koch fittings early would not be advisable as height above water cannot be accurately judged. I was not satisfied with that logic. I felt the "above water" release had some definite merit. Two aircrewmen had just died because they didn't get rid of their parachutes during the SAR evolution.

Four days later my pilot and I were positioned on the starboard catapult in our F-4J *Phantom* waiting to be launched on a routine training exercise. All prelaunch checks were normal. I reflected on the fact that in 2 days I would complete my first year in the squadron. Tension, runup, and instruments all checked good; my pilot saluted, and the catapult officer sent us on our way. As we accelerated down the catapult my pilot experienced a malfunction in the flight controls – the stick became jammed in the full aft position! Immediately after leaving the flight deck the aircraft commenced an extreme overrotation. Unable to move the control stick forward and, as the aircraft approached 60 degrees nose up, my pilot called for ejection. A rapid pull on my lower ejection handle set the command ejection sequence in motion. The seats and the entire automatic sequence operated as advertised.

As I was being rocketed away from the aircraft, the necessary procedures to complete the emergency action came to mind. An initial attempt to reach for the LPA inflation toggles was made after seat/man separation but was interrupted by the opening shock of the parachute. A second try at the LPA toggles was successful.

Many thoughts raced through my mind in those brief seconds prior to water entry. This ejection scenario was practically identical to the A-6 mishap 2 weeks earlier. There was going to be one big difference, however, because *I was going to survive.* I missed landing on the flight deck by a matter of a few feet. The ship was heading right for me and there was no doubt in my mind when I would release my Koch fittings. The "above water" release method would get a trial by fire. The hazards of a fall into the water seemed much less dangerous than facing the possibility of shroudline entanglement. As the flight deck passed overhead and the ship's anchor came into my periphery, I released my Koch fittings. The fall was much further than I had anticipated; it was between 8 and 12 feet. I landed on my back and left side. The two layers of clothing, helmet, flight boots, and flight gear provided ample protection from the fall.

The terror of a lifetime came as I surfaced to see the massive bow slicing through the water and heading right

Anyone tangled in shroudlines next to the ship has approximately 15 seconds to get clear; not doing so means certain death if engulfed by the ship's wake.

for me. It was about 10 feet away and closing fast; fortunately, I had about 3 feet of lateral separation to the starboard side of the ship as it passed. The bow wave broke my fixation on the wall of haze-gray steel and got me thinking about what should be done next. Neither parachute nor shroudlines landed on me, which was fortunate since the wall of steel 3 feet away posed an immediate threat to my survival. Having an LPA lobe punctured by rubbing against the side of the ship was my greatest fear at that moment. Initial attempts to swim away from the ship were totally unsuccessful. The turning action of the ship hindered my attempts to get away. Having the seatpan still attached created a very destabilizing effect which tended to roll me as I attempted the backstroke. In a state of guarded apprehension I decided to stop all swimming action and lay close to the surface of the water. The ship continued to pass. About halfway along the ship's side I saw my parachute approximately 10 feet to my right and almost completely submerged. One more attempt was made at getting away from the ship and parachute, but again I was unsuccessful. Remaining high in the water seemed like the wisest
4 thing to do at this time. The ship continued to churn by, and as the starboard sponson passed overhead I knew the ship would no longer be a threat. The water was getting violently turbulent.

The ship passed, and I was tossed around by the churning wake. Water splashed into my face, making breathing very difficult. A second scare of a lifetime caught me off guard. Just as I was beginning to think I had this ejection licked, a gargantuan pull enveloped my body, and before I could get a full breath of air, I was tumbling under the water. Strange as it may seem, I really wasn't too concerned about the lack of air because my LPA was fully inflated and there were no shroudlines on me. I knew I'd surface eventually; it was just a matter of waiting it out. As the seconds crept by I wondered what the A-6 BN thought about 2 weeks earlier as he was pulled under, fully attached to his parachute. After what seemed like an eternity, the downward pull ceased and I began rising to the surface. My lungs were crying for air. As I surfaced I felt the sweet coolness of fresh air. The ship was about 200 yards away in a starboard turn. The SAR helo arrived within seconds, and shortly my pilot and I were back aboard the ship.

Having experienced something only once does not necessarily qualify me as an expert, but my experience provides some valuable insight into the problems an aircrew can expect to encounter following an ejection immediately off the cat. My pilot had the "luxury" of being ejected off to the side, out of "Harm's Way" of the ship's wake and screw turbulence. His water entry procedures were executed in accordance with standard SAR procedures. He did experience minor shroudline entanglement, but managed to get himself clear with a minimum of difficulty.

Because I landed directly in front of the ship, the established water entry procedure could have put my life in serious jeopardy. I thought it necessary to modify the procedure to fit the situation. I feel that releasing the Koch fittings above water greatly increased my chances for survival. Off-the-cat ejections normally do not allow sufficient time to deploy the raft for use as a height reference, but the ship provided an adequate "gouge" to determine height above the water. Even if slightly misjudged, I think a 20 to 30-foot fall would still be more survivable than shroudline entanglement in the ship's wake and screw turbulence. Anyone tangled in shroudlines next to the ship has approximately 15 seconds to get clear; not doing so means almost certain death if engulfed by the ship's wake. Shroudline removal next to the ship would be tremendously difficult. The inability to remain stable while moving, LPA inflation, effects of possible seatpan attachment, and wake turbulence as the ship passes all add greatly to the difficulty an aircrewman would experience when trying to free himself of parachute and shroudlines. I think the likelihood of success would be very slim at best.

The lesson learned at that AOM and the thought-provoking survival scenarios presented were greatly responsible for my survival. I was fortunate to be able to learn from someone else's mistakes.

There are several points to be made from this narrative. Foremost is the fact that the Naval Safety Center does **NOT** *recommend or condone releasing of parachute risers prior to the feet entering the water. Other overwater ejections have indicated you can't really tell how high you are. And, a fall from 40 or 50 feet can be as harmful as getting banged around by a carrier's screw turbulence.*

There are, however, some very positive points. First, this aviator was prepared. He did not suffer from the old "It can't happen to me" syndrome. Therefore, as a result of this preparation (and a little luck), he's with us today. Second, and of a more technical nature, a parachute turns from best friend to worst enemy the instant it gets into the water. Regardless of location, i.e., in front of the carrier or open ocean, the parachute must be discarded immediately upon water entry. There are far too many tragic stories that support this premise. – Ed.

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air breaks

MGB or IGB? During a local training flight over water, the copilot of an H-3 aircraft noticed the torque needle fluctuating between 5 and 7 percent on both engine torque indicators. This was occurring at intervals of approximately 30 seconds. All other cockpit indications were normal.

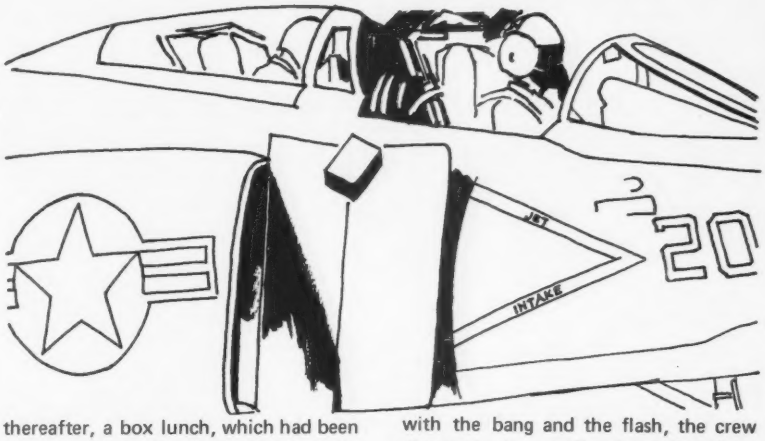
While en route to homebase, a loud rumbling noise was heard, and medium to high frequency vibrations began. The aircrew read these indications as a possible main gearbox (MGB) failure, descended to 50 feet AGL, and slowed the aircraft to 50 knots. An uneventful landing was made at the NAS some 3 to 5 minutes later.

Postflight maintenance inspection revealed that the intermediate gearbox (IGB) disconnect jaw locking teeth were severely damaged and the spacer, P/N S6135-66257, had disintegrated. This allowed the locking teeth to ratchet, vice remaining locked. Had the IGB disconnect jaw assembly completely failed in flight, it's likely the H-3, and quite possibly the crew, would have been lost, since there was insufficient altitude to recover from a tail rotor drive failure.

Of particular concern to this command was the manner in which the aircrew was "set up" for an MGB failure when, in fact, it would have been an IGB failure. Cockpit instrument readings and the medium to high frequency vibrations led the aircrew to believe they were having MGB problems. Normal MGB oil pressure and temperature readings and the absence of an MGB chips light reduce the chances that the problem is an impending MGB failure.

It was noted in the investigation report that, to ensure a positive lock of the IGB disconnect jaw prior to engagement of the main rotor, the aircrew should physically rotate the tail rotor blades until positive locking is obtained.

Expensive Box Lunch. Following landing, an F-4 was being taxied back to the squadron line. While en route, the pilot opened the front canopy. Shortly



thereafter, a box lunch, which had been placed on the right side of the rear cockpit glare shield by the RIO, fell out the right side of the cockpit, through the front canopy opening, and was ingested by the starboard engine. (It must have been a good lunch.) Both crewmen were distracted to the left side of the aircraft at the time and failed to notice the incident.

A postflight maintenance inspection of the starboard engine revealed partial contents of the box on the compressor blades. Unfortunately, a metal can opener was in the box and, apparently, it was responsible for the extensive damage to the first five stages of the compressor. The cost of engine overhaul was estimated to be $36,589.

Jet engines have been FODed by many different objects over the years, but feeding one an expensive, gourmet box lunch may be a new one. This mishap should serve as a sober lesson to all aircrews that unauthorized gear should never be carried in a cockpit. In this instance, a jet engine ended up with a bad case of indigestion.

Oh, What a Relief It Is. An A-6E was on an 8-mile final after completing a successful system weapon mission. As the B/N adjusted his seat upward, he heard a loud bang, followed by a grey flash on the right side of the cockpit. Along with the bang and the flash, the crew detected the smell of cordite (gunpowder) in the cockpit. An uneventful landing and taxi back to the line was accomplished.

A postflight inspection revealed that the B/N's relief tube was out of its stowage clip and had jammed between the seat bucket and the starboard console. When the seat was raised, the relief tube suction lever had extracted the B/N's guillotine sear, firing the impulse guillotine cartridge. The relief tube position was checked prior to flight and was not used during the mission. The B/N's navigation bag was thought to be the culprit. Its size and inflight positioning most likely moved the relief tube out of its stowage clip and into a position to extract the guillotine sear.

"Oh, what a relief it is" that the B/N didn't have to eject due to an emergency. Had he been forced to eject subsequent to inadvertent firing of the sear, he would have had to manually deploy his parachute — a mighty precarious situation at lower altitudes. This is another instance where the incorrect stowage of gear in a cockpit resulted in an unsafe occurrence. All aircrewmen should ensure that relief tube horn assemblies and gear brought into the cockpit are stowed properly, both during preflight and while airborne. ◄

HANGAR FLYING

The Good, the Bad,

"This is the Good, the Bad, and the Ugly . . ."

AN old joke says the difference between a fairy tale and a sea story is the fact that the fairy tale starts with "Once upon a time" and the sea story begins "This is no ----." The essence is that except for the introduction, it is sometimes difficult to distinguish one from the other. Similarly, hangar flying presents a unique opportunity for the professional aviator to instruct his less experienced juniors, have his own cherished myths challenged, or to spread falsehoods and fakery among the gullible. This is the Good, the Bad, and the Ugly of hangar flying, and it is essential to be able to tell one from another.

The Good: A Safety Officer's Friend. Hangar flying stories (you know, like "There I was at 20,000 feet, flat on my back") are very colorful. They evoke visions of impending doom, wrenching decisions, or aircraft straining to survive. The teller would have his audience believe that only guts or genius saved him to fly another day. Be that as it may, frequently such stories are based on fact (with a little elaboration). More important, they solve the first problem of any safety educator: once you've got the mule's attention, you *can* teach him something. Good hangar flying is attention-getting. It can be channeled into productive discussions about systems, limitations, considerations, and all the "what-ifs" that come to mind with the story. The less experienced aviator will absorb such stories' explicit and implicit lessons like a sponge on water. Discussions intentionally guided become gentle force-feeding of otherwise unpalatable information. Also, memorable stories sometimes stick in the brain when role "learning"

"Discussions become gentle force-feeding . . ."

"The best storyteller is not always the best informed . . ."

or the Ugly?

By CDR Sid White III
VP-8 Safety/NATOPS

achieved very little. That's the brightest side of hangar flying: a sea story at its best entertains and teaches. There are also a tricky side and a dark side that deserve consideration.

The Bad: Fairy Tales in Disguise. It is tricky to allow hangar flying to flourish as a means of education. The best storyteller is not always the best informed. There is the obvious risk of putting out bum poop. Trickiest of all is to counter, amplify, explain ("What the "HEAVY" meant to say was . . ."), or otherwise utilize the experience related by *his* story to get *your* point across. In doing this, an alert audience can glean the kernel of value while discarding the chaff. Coincidentally, the teller can be brought face to face with logical defects, factual errors, or potential hazards that his story reveals. The leader who can do this passes on a valuable lesson to old hands and neophytes alike, but handled improperly, exposing flaws in hangar flying "sea stories" may silence the teller or alienate the audience. Worst of all, they may allow the Ugly to survive and flourish.

The Ugly: Flight of the Bull Goose Loonie. A raconteur who enthralls compatriots with bum poop unchallenged is setting them up to repeat his mistakes. Specifics of a given story may be unique, yet the untutored audience may try to apply its lesson. Individual capability, relevant circumstances, and overriding considerations may not be defined by the teller or perceived by his listeners. When an "old hand" relates a deviation from standard practice or procedure, he must be explicit about why it was right for him, at that time, under those conditions. Without elaboration and explanation, such a story can insidiously undermine respect and adherence in an outfit's standardization program. With *appropriate* elaboration and explanation it can help others learn vicariously rather than forcing them through the same experiences. Lessons need not be written in blood twice. Once is more than enough, and an "Ugly" storyteller ignores this simple truth. Those who allow this Bull Goose Loonie to soar waste the opportunity of hangar flying: hangar flying wasted on the perpetuation of myths, contradiction of SOP, or self-glorification rather than their exposure and eradication. It can be so much more. . .

"There I was . . .": The Happy Ending. Often the lesson to be learned in hangar flying is not the anecdotal moral (i.e., the "happily ever after" part), but what led to the event itself. Could it have been avoided? The bottom line of all bad experiences is a desire not to repeat them. The hangar flyer does himself and his audience a favor when he explains what precipitated his distress, because the outcome is obvious in fairy tales and sea stories even before they are finished: our hero triumphs again! The safety educator must ensure that audiences mesmerized by "hangar flying" tales can separate the gold from all that glitters. Next time you're hangar flying, shooting down your wristwatch with your other hand, make it a "Good" sea story. ◄

Turnover? What turnover?

By Maj V. L. McMinn

ANY of you guys ever walked in off the street and taken over a job that had been vacant for a while? Or one that had just been vacated in a hurry? No turnover, no briefings, nothing! Just a desk full of stuff, a binder full of old orders, a drawer full of peanut shells, a hold box that is covered with dust, and an incoming box that has long since overflowed, threatening to engulf the whole desk. (Don't forget the container of old, dried up magic markers.) Where does one go from here? There's no need to fear, the Safety Center's here with a device that is guaranteed to get you in the right ball park. This device is the Safety Survey Review Checklist. It addresses several key jobs in the squadron: CO, Safety Officer, NATOPS and Pilot Training Officers, Operations Officer, and the Senior Member of the AMB. As a starting point to find out where to go after taking over one of these positions, the questions and the checklist are invaluable. They are all referenced (except the Command Climate section) and will quickly introduce a novice to the directives and programs with which he must become familiar. For many years, the Safety Center has been pushing surveys every time the CO changes, the ASO is reassigned, or another year passes under the bridge. Now let me suggest that if you are taking over one of the positions covered by the checklist (CO, ASO, NATOPS, Pilot Training, Ops or Senior Member/AMB), it would greatly enhance your own performance if you started with a review of the billet requirements. For this, a mini-survey, using the Survey Checklist, would be ideal. The October 1981 revision was written just for this purpose. Get a copy of your section and have at it! ◄

An ejection at sea is a harrowing experience, but when it involves a dislocated and broken arm it becomes a

Water survival ordeal

By R. A. Eldridge
APPROACH Writer

THE mission was an air-to-air gunnery hop which had all the elements of being a routine flight until the emergency occurred.

A three-plane division of A-4Ms was making live gunnery runs on an A-4E-towed banner. After the division made several runs on the banner, the tow plane reversed course to proceed toward homebase. On his second run the leader heard an explosion from his aircraft. When he observed smoke in the cockpit, he noted a utility hydraulic light and smelled a pungent odor, the type of *smell* associated with a utility hydraulic failure. The odor was familiar, since he had experienced utility hydraulic failures three previous times.

He noted a low fuel warning light and a fuel gauge reading of 900 pounds. Shortly thereafter, the leader felt and heard a loud explosion – much more violent than the first one. The aircraft rolled rapidly to the left. He was unable to stop the roll. The aircraft was smoking badly, but there were no visible flames nor a fire warning light. One of the wingmen broadcast, "Eject! Eject! Eject!" The pilot reached for and pulled the lower ejection handle with both hands. Later, he stated that he was in a positive-G condition at ejection.

Upon ejection, the pilot experienced violent tumbling. At some point in the ejection sequence, his right arm was dislocated at the shoulder, and the upper portion was broken. Although the arm was not usable, he retained use of his fingers and wrist. As he reached up with his left hand for the D-ring, the parachute opened. It gave little or no opening shock. He visually located the left four-line release, but not the right. However, the left release was too high to grasp. He was experiencing large oscillations of the parachute. The pilot inflated his LPA and removed his mask. He discarded the mask when he found it was hampering his efforts to reach his seat pan. The forward edge of his seat pan was hanging at his heels. He was unable to reach it and inflate his raft. When he reached for his survival radio, he found the pouch holding the radio unsnapped and both his radio and shroud cutter were gone.

The pilot continued his attempts to reach the seat pan. He unfastened the lower right Koch fitting and attempted to swing the seat pan up from the left side. These efforts exhausted him, and he was forced to stop and rest several times. As he approached the water, he dropped his helmet to determine his height above the water. It fell for some time before impact.

He raised his incapacitated right arm with his left hand until his right hand could grasp the right riser. He then walked his right hand up the riser to the Koch fitting by pushing on it with his left hand. He then grasped the left Koch fitting and released both fittings and separated from the parachute. He estimated that he was in the chute for 12 minutes.

After hitting the water, the pilot maneuvered the seat pan toward his right hand, grasped the seat pan release handle, and pushed the seat pan away with his left hand to open it. He then retrieved the liferaft by pulling in the lanyard with his left hand, holding the line between his teeth, then pulling in another arm's length of lanyard. He continued this until the raft reached him. He maneuvered the lanyard to his right hand, grasped it, and inflated the raft by pushing the raft away with his left hand. It inflated upside down, but after some difficulty he managed to right it.

He was unable to locate the lanyard to attach the raft to his torso harness. His first attempt to enter the raft was unsuccessful, and he determined that he had to unfasten the remaining lower left Koch fitting and release his seat pan. After his first attempt to mount the raft, it drifted away from him as it was no longer attached to him. Fortunately, he was able to paddle to it. He maintained control of the raft by grasping the purple weather shield with his teeth. *On his sixth attempt, he was able to enter the raft.*

He inventoried his equipment, located his water bottle, and drank the water. He had difficulty recovering the RSSK kit, which was hanging over the right side of the raft, but using his left hand/teeth pull grasp method, he recovered the RSSK kit survival equipment. He used the dye marker, the mirror, and the smoke when the rescue helicopter arrived. The pilot popped his smoke flare by placing the ring between his teeth and pulling it.

A swimmer was put in the water and helped attach the pilot to the winch hook. When he was lifted into the helo, his unique and exhausting ordeal was over! ◄

Cardiac Arrest

By LCDR R. L. Bachta
VA-146

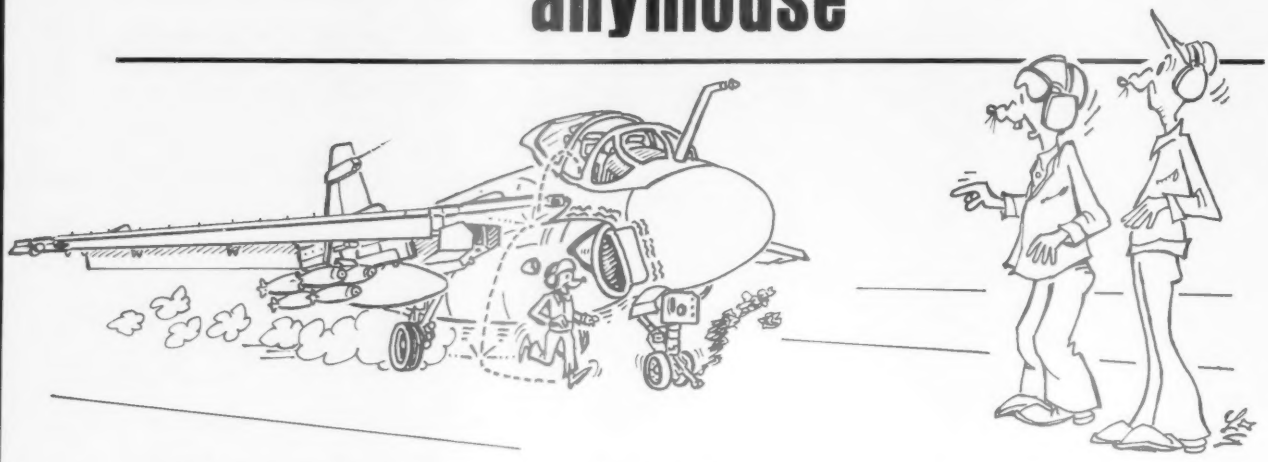
THIS is a subject no one likes to discuss since aviators have a severe dislike for any situation they cannot control. What if the crossdeck pendant (CDP) parts, the hook point unexpectedly separates from the hook, or for no known reason the hook disengages from the CDP? In the last 2 years, each of these has occurred with varying results. As a pilot or flightcrew member, what will the sequence of events be like and what can you do to prepare yourself for such a rare happening?

When it happens you will be going through your normal procedures. It's been a good hop, you roll into the groove making nice, small corrections in-close, you start to really concentrate – MEATBALL, LINE-UP, MEATBALL, MEATBALL – TOUCHDOWN – THROTTLE TO MILITARY – ARREST – HANGING IN THE STRAPS – *THROTTLE BACK* – "WHAT THE . . ." – You now have less than 1 second to decide *to eject* or stay with it.

First case. You sense that you have flying speed – THROTTLE TO MILITARY – ATTITUDE AND CHECK YOUR AIRSPEED. This can be a very tricky situation. The next time you arrest, see if you can locate your airspeed or angle of attack indicator on the rollout – it's not easy. I recommend using airspeed because it is stabilized and there is no telling what the AOA will be doing. The next thing you will hear is the air boss screaming "POWER – POWER – POWER!" At this point your head will be in the cockpit with your eyes darting around like the balls on a billiard table. You must have a specific airspeed in mind, and if you have it, you're home free. If not, go on to the second case. You sense that you don't have flying speed. EJECT, no questions asked! The Mishap Board can debate all day, or even a week or two, but you will be around to talk about it. When you read "EJECT," did you think upper or lower handle? First and foremost in any takeoff or landing situation, think *lower ejection handle*. Why? The ability to control the aircraft to the last moment and time. The fractional second that can be saved by using the lower handle can save your life. If you are flying a multicrew aircraft, it should be covered in the brief, and at least one crewman should be designated as a primary ejector.

Now let's review what really happened. The A-7 hook point separated, the aircraft had flying speed and became airborne – no problem. A TA-4 pulls the wire 100 feet, spits out the hook, and staggers into the air. An F-14 arrests, the CDP parts, and both crewmen eject successfully with minor injuries. DO YOU HAVE FLYING SPEED? ◄

anymouse



Intruding Troubleshooter

AFTER recovering one of our squadron's *Intruders* at NAS Northwest, an ex-AMO/BN/lieutenant commander unstrapped from his Martin-Baker and left the cockpit while the ramp crew was checking the bird for hot brakes. The boarding ladder had not been extended on the starboard side, the engines were still running, and the BN was standing on top of the starboard intake. The plane captains present couldn't believe their eyes as he clambered down from the aircraft and approached the nosewheel from in front of the starboard engine as it was still winding down! We found out later that he was attempting to aid maintenance in troubleshooting an inflight gripe, but at the time, all maintenance personnel present considered this whole evolution to be unsafe.

Pilots and BNs belong strapped in their seats until all engines have stopped and proper safety pins are installed – not on top or in front of intakes while engines are still running or winding down! Agreed? We appreciate the assistance of aircrew members in fully explaining inflight discrepancies, but the proper place for fliers is in the cockpit until shutdown. Leave the troubleshooting to the qualified and experienced maintenance personnel!

Intrudergroundmouse

Night Check Crew Fallout Hazard

TWO night check maintenancemen were carrying out some routine maintenance on an H-46 parked on the MCAS ramp area. While one of the troops proceeded to the cockpit area to perform the pre-APU start checks, the other entered the bird and proceeded aft to complete his checks in the rear cabin.

The cabin man was focusing his attention on the ramp and hatch area when he narrowly averted stepping into the void created by the open inner door which was folded aft. Using some deft footwork, he was able to hyperextend his normal step length and overstep the open rescue/cargo hook hatch without mishap.

The fortunate and dextrous "fixer" reasoned that the hatch had been left unsecured by either the flightcrew subsequent to flight or maintenance personnel in the process of performing work on the installed hoist/cargo hook.

The obvious safety rules that were violated involve the general rules of safety precautions for all aircraft accessory equipment, including the inner door, in this case.

Nimblemouse

REPORT AN INCIDENT
PREVENT AN ACCIDENT

Friction – Static or Kinetic?

WE were operating from NAS Patrol Country, and the push was on for maintenance control to provide an "up" bird to meet a late operational commitment. A taxi pilot was nowhere to be found, so a well-qualified PO1 mech was pressed into service. With typical "can-do" spirit, he proceeded to the aircraft and performed a full-power turnup on the front of the squadron's parking ramp.

The fuel load was minimal, the power available was abundant, and the aircraft rapidly progressed from a static to a kinetic state. Result – *a pair of 18-inch, very black and visible skid marks from the chocked main-mounts!* Fortunately, the mech detected the aircraft motion and decreased the power before the *Orion* contacted any aircraft, personnel, or GSE.

The squadron's SOP prohibited high-power turns unless they were performed in designated high-power areas. Squadron directives, procedures, and instructions are more than a paper drill. *Read and heed!*

Skidmouse

E-Handle Logic

After about 1 hour of flight, the chips light for a P-3's No. 4 engine illuminated momentarily. The flight engineer called, "Chips light, No. 4," and proceeded to test the warning lights. The PPC in the left seat acknowledged this by announcing, "You didn't see any chips light!" Surprised, the FE maintained he had not only seen the light flicker but that he was aware this particular aircraft had a history of chips lights on the No. 4 engine. The PPC stated, "If there are any chips lights to be seen, then I'll see them, so just forget about it!" and concluded by dismissing the FE's observations by reiterating, "I'm not going to feather that engine!"

The FE proceeded to check for secondary failure indications and observed the power section oil pressure at 60 psig, the rear gearbox oil pressure at 200 psig, the oil temperature at 70°C, the oil cooler 20 percent open, oil quantity at 7 gallons, shaft horsepower stable, RPM 100.1 percent, TIT 924°C, and fuel flow stable. The FE persisted by reminding the PPC about an incident just 3 weeks prior when the No. 4 engine chips light illuminated steadily and the engine was feathered during a TransPac flight. At the conclusion of the flight, the postflight inspection had revealed metal slivers on the rear gearbox magnetic plug.

This flight continued for 9 hours, and the FE reported several intermittent chips light indications to the PPC without response to his recommendations to feather the engine. Upon returning to Homeplate, the magnetic plugs were pulled, and heavy metal was found in both the filters and on the rear gearbox magnetic plug.

This particular FE is a systems expert in the P-3 aircraft, and when recommendations based on NATOPS procedures *and* systems expertise are ignored by the PPC, is it any wonder that the fleet is short of highly-motivated FEs?

Amazed slivermouse

It is both distressing and incredible that aircrews must fly with anyone who willfully disregards prudent rules of aircraft safety. That there was a NATOPS violation here in not feathering the engine or whether NATOPS adequately covers the situation is really not the major issue. We train and pay aircrews to think, and a prudent aircraft commander should never jeopardize his life, his crewmembers' lives, or his aircraft by ignoring obvious clues to an impending engine failure and pressing on with a peacetime mission. A precautionary feather and return to base would have made that engine still available for an aggravated situation in the event of some other emergency.

Case in point – A mishap occurred recently where a P-3 threw a propeller and severely damaged an adjacent engine and the flap system. The aircraft was subsequently ditched with loss of both life and the aircraft. Could there have possibly been a clue from some previous flight that was ignored and led to that propulsion failure? Think about it!

Pre-Chocks Anticipation

THE hop had been a long one. I was in a hurry to get our bird safely into the chocks and take off on liberty. I was riding in the observer's seat of an OV-10 as we completed an uneventful night landing and rollout. To expedite our deplaning evolution, I located the seat pins and draped them over the instrument glare shield to enable a quick secure and getaway after shutdown.

The immediate result was a shower of sparks, a dark instrument panel, and a whole handful of popped circuit breakers! As soon as the offending pins were hurriedly snatched

away and the circuit breakers were reset, things returned to normal. I'm happy I wasn't in a bigger hurry. If I had made the same blunder while we were still in the approach in poor weather, the situation could have gotten very hairy!

Murphy dwells in that space behind the rear seat panel. *The only unit that belongs back there is a regulation electronics technician.*

Libertymouse

Limited Access Desired

WHILE on duty at a naval air station, I observed a civilian on a moped crossing the ramp/taxiway in a leisurely and weaving manner. Close by, a C-12 was turning up to taxi. Security was notified but was too late in responding to apprehend the violator. This is only one of several violations of security on ramp areas.

The problem is that civilian employees are not aware of regulations concerning ramp space. The most dangerous situation is that the ramp/taxiway is completely open to the street at the air terminal and allows a constant flow of pedestrian and vehicular traffic.

I believe it is imperative that areas such as this be fenced off and posted. I would suggest that a portion of the fence be put on a roller assembly and security be upgraded.

Securityconsciousmouse

The purpose of Anymouse (anonymous) Reports is to help prevent or overcome dangerous situations. They are submitted by Naval and Marine Corps aviation personnel who have had hazardous or unsafe aviation experiences. These reports need to be signed. Self-mailing forms for writing Anymouse Reports are available in readyrooms and line shacks. All reports are considered for appropriate action.

Phantom Folly

By Bill Peters

THE mishap chain of events really began 2 weeks prior. The MLG had been removed and reinstalled by NARF for a nondestructive inspection (NDI). On the PMFC, the crew reported a port MLG unsafe indication prior to flight and an unsafe NLG indication in flight (with the landing gear handle selected down). The F-4N was downed and corrective maintenance consisted of cleaning and lubricating the NLG and port MLG limit switches. The aircraft was dropchecked seven times with no discrepancies and released for flight.

The next PMFC crew noted that both MLG indicators were **unsafe** prior to start, but the crew initiated the start sequence based on a maintenance placard in the yellow sheet book, which noted that the unsafe indication would correct itself once hydraulic pressure was applied. (Three other squadron aircraft were similarly placarded at the time.) The flight was completed without further incident, the PMFC pilot wrote off the MLG indications as an "up" gripe, and maintenance control disposed of the discrepancy by annotating the Aircraft Discrepancy Board with, "Both main gear show barber pole until hydraulic pressure comes up on start." The aircraft continued to carry this discrepancy as an "up gripe" through the next 12 flights, including a flight aboard a carrier.

Maintenance was finally performed in the front cockpit, requiring removal of the left utility panel. This was "facilitated" by placing the landing gear handle in the UP position. The AE who performed the maintenance *failed to ensure* the landing gear handle was returned to the DOWN position as did the CDI, the plane captain, and the pilot who manned the aircraft for the next launch cycle. The stage was set for a mishap.

During the prestart checks, the pilot noted the gear handle light illuminated but failed to physically check the gear handle down or visually check the landing gear position indicators. The pilot initiated starboard engine start, held bringing the No. 2 generator on the line because of an oil pressure reading of 40 psig, and commenced cranking the port engine as the starboard engine stabilized at idle RPM. As the port engine passed approximately 20 percent RPM, the pilot noted an aircraft "lurch" followed by stabilization at idle RPM. Since starboard engine oil pressure had dropped below 40 psig, the pilot selected No. 2 generator on the line and – you guessed it – the aircraft settled slowly, ruptured the 600-gallon centerline fuel tank and narrowly missed pinning the troubleshooter who was disconnecting the airstart hose beneath the aircraft. As the pilot belatedly secured both engines, he noted the gear handle was in the UP position and the warning light was illuminated.

What happened to the safeguards that *Phantom* aircrews and maintenance personnel rely on to prevent such a costly and potentially disastrous mishap? Why did the MLG retract with the weight on the main landing gear? Why was the gear handle placed in the UP position in the first place? How did four separate squadron personnel omit the gear handle position from their preflight inspection? How did maintenance control allow the maladjusted MLG down limit switches and the resulting malfunction indications to be carried as an "up" gripe?

This mishap sequence began when Maintenance Control misinformed the PMFC pilot concerning the acceptability of *"internal wear in the MLG side brace actuator(s)"* as the reason for the barber pole indications until hydraulic pressure was applied to the aircraft. The bird was then, unbelievably, launched 12 more times, including a launch to the ship, with each aircrew buying off on the "up" placard, **in direct conflict with NATOPS.**

Maintenance Control allowed the MLG indication gripe to be carried as an "up" gripe on a placard in the front of the ADB, and all pilots who signed for and accepted the aircraft for flight **should have known** that they were in violation of NATOPS.

The electrician who removed the utility panel violated MIM procedure in that he placed the gear handle in the UP position. This deviation was further compounded by failing to return the handle to the DOWN position.

The CDI who inspected and signed for the work neglected to check the gear handle down. MIM does not specify this for the CDI, since the handle never should have been placed UP.

The plane captain failed to ensure the gear handle was properly positioned.

The crew which manned the aircraft had previously flown the mishap bird and were familiar with the anomaly of the MLG indications. As noted above, the pilot was guilty of an error of omission in that he failed to check the gear handle down prior to entering the cockpit and accepted the **unsafe** gear indications after electrical power was applied.

The final safety valve was rendered **unsafe** due to the maladjusted MLG down limit switches. The electrical signal to the up side of the landing gear selector valve was allowed to pass through both the port scissor switch and the port MLG down limit switches, allowing the landing gear UP cycle to commence as soon as the utility system was activated by No. 1 and No. 2 pumps as the engines spooled up to idle RPM. The only thing that prevented retraction of the NLG was positioning of the tiedown chain.

The procedures laid out in MRC card decks, MIMs, and both the PCL and NFM were put there for very good reasons, often as a result of early incidents or mishaps sustained over the last 20 years. The *Phantom II* has been operational for a long time, but only rigid conformance to these doctrines will ensure that we preserve these dwindling TACAIR assets.

Flight deck complacency

By Bill Peters

THE flight deck of an aircraft carrier has been recognized as a hazardous work environment since the first Vought VE-7SF of VF-2 launched from USS LANGLEY (CV 2) in October 1922. As in other hostile environments, there is always some new type of hazard that will rear up and bite some unsuspecting crewman. Such a mishap recently took the life of an experienced petty officer during blue water operations.

The hazards of the TF-34 engine in the S-3A aircraft have long been known, and the dangers of the low thrust lines and the high residual thrust of the engine in the medium power range have been given wide dissemination. Nevertheless, a moment of complacency toward the end of a long operating period resulted in a fatality and should remind us all of the fact that constant vigilance on the flight deck is a prerequisite to longevity.

A check of existing records at NAVSAFECEN revealed the S-3A to be the most recent of a long line of carrier aircraft to have ingested maintenance personnel. From 1969 until the present, there have been 25 mishaps involving ingestion of naval personnel into naval aircraft, resulting in 6 fatalities, 13 major injuries (including loss of limbs), and an additional 6 serious to minor injuries. The aircraft and number of incidents involved were: F-8 (3), A-6 (6), A-3 (1), A-7 (6), F-4 (4), T-2 (1), and F-14 (3), in addition to the S-3.

Power settings being used at the time of the mishaps show that only one F-8, two A-6s, two A-7s, and one F-4 were being operated in military power range, none in afterburner range, **while the balance were in the medium power range or below.**

Incidentally, the A-7 will be around for quite awhile, and the unwary should take note of the fact that *Corsairs* were involved in **all** of the other fatalities during this period. Education, continued vigilance, and awareness in all flight deck operations is the only way to prevent future occurrences. **Don't get drawn in by flight deck complacency!** ◄

The AESOP (fable)

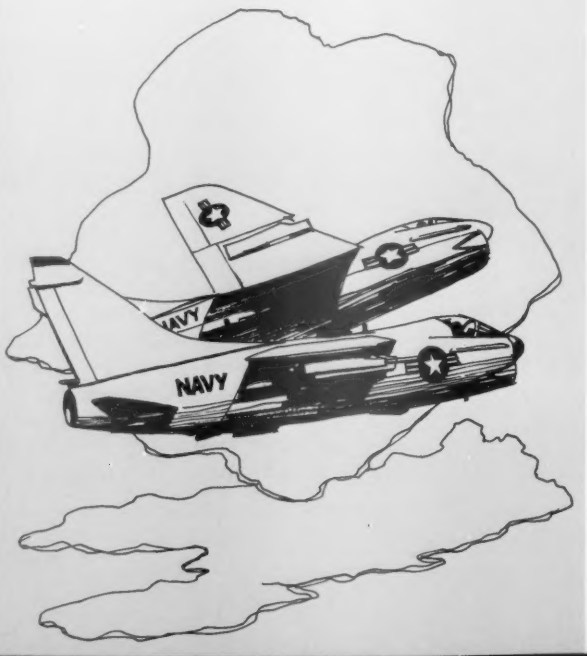
ANY aviator, past or present, who says he hasn't allowed himself to come under the spell of the AESOP (aviator evading standard operating procedures) Syndrome is either without memory or is a compulsive prevaricator. Whatever the reasons may be, when a pilot or other member of a flightcrew resorts to AESOP, it means he is going to do something that shouldn't be done or omit something that should. Most often, those afflicted by the syndrome shake off its effects and get back on track before anything serious develops. Sometimes, however, AESOP persists with dire results. Illustrations of this syndrome follow:

• After takeoff, an A-4 pilot heard a muffled explosion as the aircraft accelerated through 230 knots. The tower informed the pilot that flames were shooting from the A-4's tailpipe. The pilot began to experience eye irritation and his oxygen began to taste bad. Sensing imminent danger, he entered a wide downwind approach at 200 knots and 2,000 feet MSL. Control of the aircraft began to deteriorate, so the pilot disconnected the hydraulic flight controls. As EGT climbed through 800 degrees, aircraft control was completely lost and the pilot safely ejected. One of the main cause factors associated with this mishap was the pilot's failure to follow NATOPS by checking the fuselage fuel tank filler cap which was in fact not secured. This allowed fuel to pour into the intake ducts and led to the loss of an aircraft. As too often happens, overlooking a small but important item ended up costing a bundle.

• Two A-7 pilots briefed for a low level nav hop which included a planned lead change en route. The lead pilot had recently become qualified as a section leader. Following takeoff, the flight proceeded as briefed to the second checkpoint and, upon arrival, commenced a shallow turn. At this point, the wingman transmitted "Why don't I go ahead and take the lead now?" Lead, realizing that he had overshot the desired heading, reversed his turn and answered his wingman's transmission with "Okay." The wingman assumed that lead had been changed and responded with "I've got it." Lead, not hearing the "I've got it" transmission, intended to pass the lead after establishing the flight on the proper heading to the next checkpoint. Each pilot now believed that he was leading the flight and that the other pilot was wingman.

Each pilot proceeded to fly an independent and conflicting flightpath. The wingman thought lead's slow closure was an intentional crossunder maneuver and took no evasive action. Lead continued to close on the wingman while looking in the opposite direction to visually clear the area in the direction of turn. The wingman's attention was directed inside the cockpit to check his instruments. Lead looked at his wingman as the aircraft were closing through about 20 feet separation. Lead then pulled up hard and to the left, but it was to no avail. The aircraft collided and immediately became uncontrollable. Both pilots safely ejected.

This midair collision should never have occurred. The section leader failed to conduct a thorough brief and maintain control of the flight once airborne. The wingman failed to observe and exercise basic, essential elements of air discipline. These two pilots were in the advanced stages of the AESOP Syndrome.



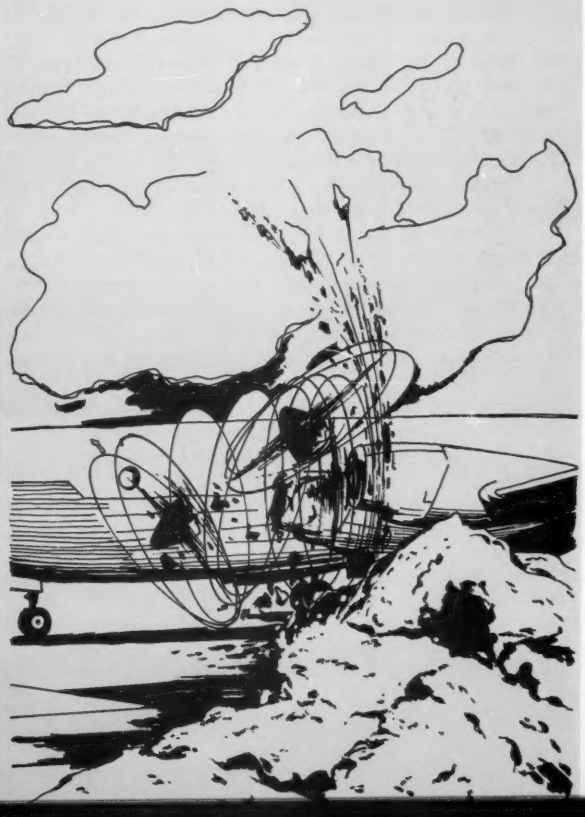
Syndrome

By Russ Forbush
APPROACH Writer

• A T-2 pilot, returning from a training flight, experienced landing delays due to a fouled runway. The delays included a 360-degree turn on GCA for traffic separation and three subsequent waveoffs. A further extension while upwind ended in a flameout on short final due to fuel exhaustion. The aircraft impacted 225 feet short of the runway. The landing gear sheared and the T-2 came to rest after 140 feet of travel. Luckily, there were no injuries. During the entire evolution, considerable assistance was offered but rejected by the pilot. It took much coaxing from the tower before the pilot would declare minimum fuel, and at no time did he declare emergency fuel. This pilot had a bad case of AESOP. He gladly should have accepted the offered help and gotten the T-2 back on the deck while he still had the fuel to do so.

• A P-3 suffered substantial damage while taxiing to the line area after a flight when the No. 1 prop contacted a snowbank. The No. 1 prop and gearbox separated from the aircraft, striking the No. 2 prop and causing it and its gearbox to separate from the P-3. Numerous pieces of flying debris and the No. 2 prop struck the fuselage, inflicting further damage. The pilot erred by attempting to taxi without assistance in an area surrounded by snowbanks. He also was in error for releasing his crew from duty which deprived him of adequate observers. Additionally, he failed to secure the No. 1 and 4 engines while taxiing in a restricted area. By the time this P-3 pilot realized he was under the spell of the AESOP Syndrome, the damage had been done.

These mishap briefs are random examples of what can happen when a pilot fails to give 100 percent of his attention from brief through debrief. These crews made mistakes which led to mishaps, but our purpose here is not to castigate them. There isn't a pilot or NFO among us who can honestly say he hasn't done something dumb while flying an aircraft and gotten away with it. Although there are a few flagrant violations of air discipline, most result from deviations in normal operating procedures. The great majority of naval aviators learn from their mistakes and don't make the same ones again. They also learn from the mistakes of others – isn't this what the naval aviation safety program is all about? ◄



LANDING EXPECTANCY

By Capt Byron L. Howard
Associate Editor
The MAC Flyer

Some approaches are better the second time around.

"DID you get the weather for the home drome, copilot?"

"Affirmative, boss. Should be a 'no sweat' approach if there ever was one. Metro said the weather was 25,000 feet scattered, winds light and variable."

"Super! Okay, crew, we'll shoot the ILS to Runway 29 just for practice. Missed approach procedures will be as published. Are there any questions?" (The silence is deafening.)

Sounds familiar, doesn't it? In the rush to get into the chocks it may be the same briefing you have heard or given quite a few times. After all, it complies with the requirement in the briefing guide. I mean, it says right there in black and white, "missed approach." So you say, "Standard, as published. Always have and always will, especially if the weather is severe clear." But before you take offense, let me throw some ideas at you that just may keep you on the safe side of the most critical phase of flight. Let's go back to the beginning of this tale with you in the pilot's seat and with me playing the part of "devil's advocate."

Comply With Instructions. "Navy SH-011 is cleared to the ILS, Runway 29 approach. Contact the tower now on 126.2." Again, it should be "no sweat," the weather is severe clear. But what if the tower issues the following instructions?

"Navy SH-011, go around, truck on the runway. Execute published missed approach. Contact approach on 118.1."

Somehow you stammer out this request: "Tower, Navy SH-011, uh, how 'bout a closed?"

"Negative Navy SH-011. Unable closed. Expedite published missed approach. Contact approach on 118.1."

That was really sweet of the person in the tower, wasn't it? There you were at decision height about ready to go into your pre-flare flare when you heard those positively ugly words, "Go around." So now, good buddy, seems to me you were saying something about this being a "no sweat" approach. So, why are you and the navigator and copilot digging so hard to find the approach book you so smugly stashed back in the pubs bag, thinking you had no further use for it? Because it's clear and a million and we tend to think, "It'll never happen to me," that's why.

Complacency! Yes, it's true. The pilot was complying with the letter of the law when he did his briefing, but not the intent. Someone had a very good reason for putting in that part about "missed approach" in the briefing guide. What "they" really meant was for you to actually tell the crew what you plan to do with the aircraft, at least initially, so there won't be any surprises when you suddenly have to take it around. In short, you prepare for the unexpected! When tower issued those infamous instructions to our steely-eyed crew, not only the pilot, but the entire crew was lost. Why? Simple. It was complacency. Remember there was a "deafening silence" after the pilot asked, "Any questions?" There were none then, but there should have been. And why were there no questions? Because the crew didn't want to think about the missed approach; they knew they were going to land. They *expected* to land.

Landing Expectancy. Underlying almost every approach is a subconscious mental set called, for lack of a better term, landing expectancy. Anticipatory in nature, it is the belief that pilots will land their plane on the first try on *every* approach – *every* time. Now, we're not saying this is bad. A pilot by nature must have this desire to land. In fact, every crew should have a normal amount of "landing expectancy." But ignoring all possibilities, including go-arounds, plus an unhealthy dose of complacency may adversely affect critical

decisionmaking processes. When this occurs, overall safety awareness and perception suffers, and the results may be nothing short of disastrous.

Why? Let's answer the question of why with this question: How many times have you actually gone missed approach? If you're like the overwhelming majority of pilots, the answer is once or twice – maybe. So, if you have had only one or two actual "for real" missed approaches in your career, you are set to land regardless of the actual circumstances. In other words, you are "programmed for landing." You begin to perceive events and external factors as you would like for them to be instead of how they really are. All aircrew members – old pilots, copilots, navigators, engineers and loadmasters – are susceptible to this phenomenon. As a result, then, every one must be on constant guard against a "landing expectancy" type incident.

The Cure. Fortunately, there are several ways to prepare for a missed approach situation and help keep everything in its proper and safe perspective. First, try to recognize your mental set. Are you keyed to land regardless? If you are, you can counteract a stronger-than-normal landing expectancy on a conscious level. Overconfidence and complacency can be factors contributing to this "disease." In addition, keep in mind these three things a pilot or crew can do to "keep things in perspective."

- Become familiar with the missed approach environment. The simulator is the best place to practice briefing, flying, and coordinating missed approaches. It also provides those varied conditions not available to aircrews on an everyday basis. In a simulator, you can learn what can and cannot be done in the cockpit to reduce landing expectancy.
- When briefing the approach, prepare for the missed approach, even though the weather is CAVU and there is absolutely no traffic in the pattern. By doing this, you are practicing for the real thing every time, so when the big "go around, truck on the runway" comes from the tower, you'll be 100 percent ready. You'll also reduce any uncertainty that may exist in your crew concerning what *you* are going to do – and what you expect *them* to do. The job of eliminating complacency involves the whole crew.
- Know your procedures and follow them. Deviation from set standards can be downright dangerous and is an unprofessional approach to flying. You can preplan many decisions in the approach briefing, thus eliminating "guesswork" at critical points in the approach. Reviewing procedures during your approach briefing when there is any doubt among the crew also places you one step closer to a successful approach.

We all expect to land out of our precisely flown and precisely executed approaches. That's normal and altogether acceptable. Adequate planning and a flexible attitude, though, will prevent us from neglecting all other possibilities and increase the likelihood of a safe landing, even if it is the second time around. ◄

Maj Bill Gamble, USMC
Capt Rick Hull, USMC
VMFA-314

Maj Bill Gamble, USMC (left),
Capt Rick Hull, USMC (right).

CAPT Rick Hull (pilot) and Maj Bill Gamble (RIO) took off last in a flight of three F-4Ns from Kirtland AFB on the second leg of a weekend cross-country. Preflight, taxi, engine runups, and takeoff roll were normal. Landing gear and flaps were retracted without incident. When the afterburners were deselected at 275 knots, the right engine fire-warning light illuminated. The throttle was retarded to IDLE but failed to extinguish the fire-warning light, so the right engine was secured in accordance with NATOPS. The fire-warning light remained on. The crew informed the formation leader of the fire light and notified Albuquerque Departure Control of the inflight emergency. Shortly thereafter, Capt Hull observed a flashing wheels warning light and responded by turning the bleed air switch off. He commenced dumping fuel in preparation for an immediate landing back at Kirtland AFB. Maj Gamble observed white smoke trailing from the right side of the aircraft, so dumping was terminated. By now the formation leader had maneuvered to join up and was able to confirm smoke and other secondary signs of fire in the starboard engine bay and wing area.

With the aircraft being flown in a wide left turn, Capt Hull and Maj Gamble discussed ejection but decided to stay with the aircraft since no flames were visible and the *Phantom* was still flyable. The stick momentarily froze laterally, but Capt Hull was able to free it. Abnormal force was required to move it.

Minimum controllable airspeed was 230 knots. At 5 miles from the runway with the landing gear up, the utility hydraulic system also failed. The landing gear were extended by the NATOPS emergency procedure, but the approach could not be salvaged. Not wanting to turn into the dead engine, Capt Hull continued his left turn to set up again for a long straight-in approach. During this turn, the pilot noted that PC-2 had dropped to zero psi. The crew again discussed ejection parameters in case the aircraft became uncontrollable on final or after touchdown.

The aircraft touched down at 230 knots. On deployment, the drag chute failed and the aircraft began to drift left as it decelerated. Capt Hull stopped the left drift, but he could not correct back to the runway centerline. He lowered the hook and engaged the long field gear (BAK-9) at 90-95 knots, 50 feet left of centerline. The F-4 came to rest 850 feet into the overrun. The crew quickly egressed and the firefighters extinguished the remaining fire in the right wing.

Several compounding emergencies, two approaches, and one (eventful) landing, all occurring in less than 15 minutes, demonstrate the value of knowing and applying correct NATOPS procedures. The professionalism and exceptional aeronautical skills of Capt Hull and Maj Gamble saved a valuable aircraft and prevented the crewmembers and the general populace from being exposed to the hazards of an ejection.

BRAVO ZULU

LT W. E. Gortney
VA-82

SHORTLY after launching from USS NIMITZ for a night SSSC mission in his A-7E, LT W. E. Gortney experienced a main generator failure. He immediately extended the emergency power package (EPP) and checked the emergency generator switch in cruise. He then moved the flap handle out of ISO-UTILITY. In spite of this, he could only regain partial electrical power.

Further complications arose when the engine hot light illuminated and the TOT rose to 640°C – well above limits. LT Gortney eased back on the throttle to extinguish the hot light and to take stock of his situation.

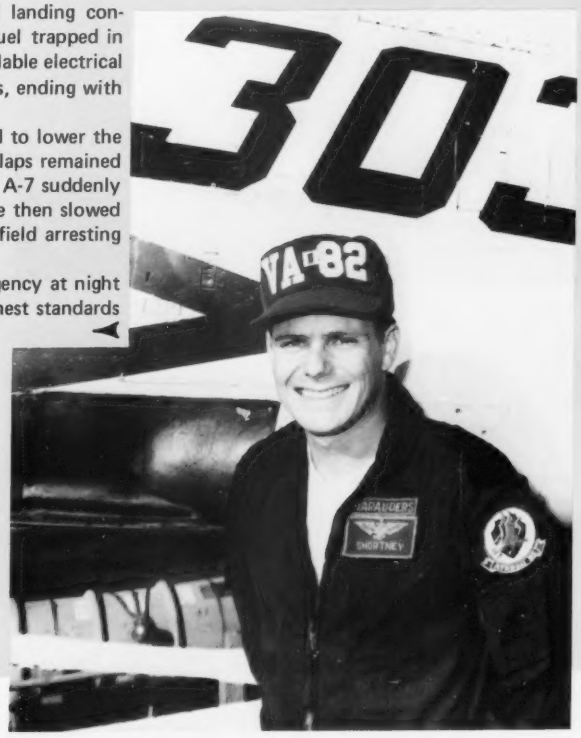
The emergency generator was producing some d.c. power. He used his flashlight to check the cockpit instruments for other indications. He found that the pitot-static instruments were the only ones available to him.

To communicate with his flight leader, LT Gortney used his PRC-90 survival radio and was able to rendezvous with his leader overhead the ship. Because of the type of emergency he was experiencing, LT Gortney was unable to recover aboard ship and had to divert to NAS Sigonella, 200 miles away. An airborne E-2C from VAW-124 established communication with Sigonella, informed them of the emergency, and passed the current weather and field status to LT Gortney.

En route to Sigonella, LT Gortney discussed approach and landing considerations with his leader. He had unusable and undumpable fuel trapped in the aircraft and was unable to completely extend his flaps on available electrical power. They decided on a flaps-up approach speed of 180 knots, ending with an arrested landing at Sigonella.

Over the field, LT Gortney lowered the landing gear and tried to lower the flaps. The landing gear lowered normally, but the trailing edge flaps remained up. Moments later, while LT Gortney was on final approach, the A-7 suddenly ballooned as the trailing edge flaps came down unexpectedly. He then slowed the *Corsair* to a normal approach speed and engaged the short field arresting gear.

LT Gortney's skill and coolness in handling this critical emergency at night under very demanding circumstances was in keeping with the highest standards of naval aviation.



Safety and command responsibility

By RADM Frank Ault, USN (Ret.)

I AM sure that none of us in positions of command have the slightest doubt as to the official assignment of responsibility for the safety records of our organizations. The real problem is the means to be employed to achieve the end. Most of us are probably like the young sheik whose father, the sultan, gave him a harem for his birthday; we know what's expected of us . . . but we're not quite sure where to start. Today, then, I will cite a few of the starting places I've found useful in the hope that you may find my observations of value in optimizing your own safety records.

Most of us do the big, obvious things. This is quite apparent when we look through the report of any command inspection and find that we've met most of the basic requirements. Most of us are prone, in the discharge of our command functions, to cover a subject once (or issue an order) and assume that our status as commanders automatically ensures that the job will be done. Most of us dislike repetition. Most of us like to feel that our positions in the "driver's seat" – achieved with no little struggle – have at long last freed us from the mundane details of daily routine and finally have afforded the time and perspective we need to concentrate on the "big picture."

But if you appoint a safety officer, write a squadron SOP, pass out orders to your department heads, require each pilot to be NATOPS qualified and to read and initial all directives applicable to his airplane and then sit back and await results, they probably won't be long in coming – in the form of a crash. Bad luck? Perhaps. It is much more likely, however, that you failed to recognize that if there is one single, significant key to success in the supervision of your safety program, it is meticulous attention to detail, backed by constant repetition of any point which, from your observations, appears to have been either forgotten or ignored. To illustrate: All of you are conversant with current requirements for personal gear to be worn or carried while operating aircraft. At one time or another every crewman has read your SOP on this subject and has read and initialed the directives of higher authority in this area. But when did you last require all crewmen to fall in for inspection, dressed and equipped as if for flight, and then follow up with an inspection of the remainder of the gear in their lockers to ensure it was usable, effective, and up to date?

Unfortunately, many people tend to treat safety either as a separate subject or as a prime objective of the operation rather than a byproduct. It is my contention that safe operations evolve automatically from establishing how a thing can best be done, insisting that it be done that way, and *checking to see* that it is. Standardization implies that only the best techniques (operational, maintenance, or other) have been selected. Followup ensures that they are being used. Without standardization you don't even have a bench mark with which to measure performance. But don't stagnate – a better mouse-

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trap may be invented. Be alert to possible improvements and don't be too pigheaded to accept better ideas than your own. *Draw on talent at any level. Never be too proud to ask the man who has the dope.*

Here, command with its broader perspective can do another job by examining activity in all related areas and instigating changes where performance can be amended or improved. Too often we become so immersed in intersquadron, interair wing, or intership competition (friendly and otherwise) – or we become so enamored of the idea of "making our mark" on our own – that we are blinded to methodology or niceties of technique displayed right next door which we could well use to sharpen up our own operation. Moreover, we often "compound the felony" by developing a good idea on our own and then keeping it a secret for reasons ranging from pure failure to pass the word to an occasional fear that the other outfits will catch up. It is in cases such as these that a commander, such as a CAG, can do a better job by maintaining his objectivity and ensuring that good ideas are sorted out and given the widest possible application. A possible example of this might be a replacement air wing where one squadron insists that familiarization students can best be taught landing techniques by stationing an LSO on the runway for talkdowns during familiarization landings, while one or more other RAG squadrons use an instructor to fly a close wing on the student all the way around the landing pattern, through touchdown. It is clearly the job of the wing commander to determine which, if either, of these techniques is superior and to settle only for the best throughout his air wing.

It goes without saying that you can't command unless you know your aircraft and its capabilities and are a fair hand at demonstrating that you do. Equally important, however, is the *ability to transmit what you know.* One of the worst safety records I've ever witnessed came in a jet squadron quite a few years ago where the squadron commander was an ex-Blue Angel and his XO was a test pilot school graduate. It was a rare day when either of these gents did less than riddle the banner in gunnery – or did anything else airborne in other than the outstanding category. Yet the fatality rate in this squadron exceeded the total of all other outfits in the area. I cannot help but think that what these people knew about flying simply was not being received at the "Indian" level. This type of leadership of the "out in front" variety, with never a look in the rearview mirror to see how the pack is doing, bids fair to dull a little of the personal lustre of any CO who can't get the word across.

Personnel error is still the primary cause of accidents. Fortunately, it is the area most susceptible to direct command action. Here the commander's primary tools are education and training, backed by the considered, judicious application of discipline. To realize their effectiveness, however, these tools impose certain prerequisites:

- You must know your people – personally and professionally. This is achieved only by frequent personal observation under as many different conditions as possible.
- You must retain your objectivity. Don't rely on reputation. Even an ex-Blue Angel or a Navy Cross winner must be evaluated in terms of his performance by today's standards. The basic criterion is "here and now in this job, in this aircraft."
- You cannot tolerate mediocrity. Trouble here often stems from a misconception of loyalty. Quite often a squadron commander will defend inferior performance by one of his pilots simply on the grounds that "he's one of my boys." Today's emphasis on professionalism requires sustained high-level performance. We need not (and cannot) tolerate anything else.
- You must preach self-reliance, not blind dependence on others. Expect the other man to do his job, but don't come apart at the seams if he doesn't. As a carrier air wing commander I witnessed several examples on a shakedown cruise where the operation got slightly out of hand at times because of a volatile combination of experienced (possibly occasionally overconfident) pilots and a "green" ship's company. Pilots just recently off an experienced carrier had considerable difficulty in adjusting to the slower pace of a flight deck where 40 percent of the personnel were in the initial stages of learning. We were fair game for flight deck accidents of just about any description until we realized that some of the slack could be taken up by reemphasis of the pilot's responsibility for his aircraft and the abandonment of habit patterns which had placed undue emphasis on performance by the other fellow. Once this was done, we were ready to develop the teamwork which was in satisfying evidence by the time the shakedown cruise had ended.

Another common pilot failing noted during our shipboard operations – often noted elsewhere over the years – was the reluctance or inability of pilots to take charge in cases of airborne emergencies. Too often a call would come from the aircraft involved stating such things as: "I have a sump light," "I have a rough running engine," or "My oil pressure is falling," with *no statement of intentions or desires.* Pilots must be drilled and drilled again until they understand that decision rests with the man in the cockpit who, better than anyone else within UHF range, knows the exact nature of his troubles and what he is capable of doing about them. The time inevitably comes when the voice of command is not available on UHF and the pilot must think for himself – whether or not he smokes that well-known brand.

Earlier, I took brief notice of the word "discipline" as it affects your supervisory function, implying that judicious

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use of discipline, in a punitive sense, was a tool at your disposal. In another accepted connotation of the word, however, "discipline" can mean training – training that develops orderliness and efficiency. Certainly there can be no argument that emphasis on the latter connotation should result in deemphasis of the other. In the area of discipline, I think I can best help you by citing a few of the danger signs. If any of the following are in evidence in your organization, you have discipline problems:

- Sloppy preflighting.
- Sketchy flight planning or incomplete or inadequate briefing.
- Failure to wear (or carry) prescribed items of personal equipment.
- Incomplete yellow sheets.
- Poor radio discipline.
- Failure to read "all crewmen read" materials.
- Delayed or haphazard crewmen weekly inspections.

There are, of course, several other items which could be listed. Examine your own units for trouble spots and get after them.

Many people have searched for years for some single, sweeping change or some major program calculated to reduce the safety problem to manageable proportions. Even the most expansive ideas have achieved only moderate success, however, and none of these can be entirely successful until we fully realize that success lies primarily in meticulous attention to even the smallest detail. Safety is so closely interwoven into every facet of aircraft maintenance and operations that it's impossible to tell where one stops and the other starts. Here are a few examples of seemingly small items which I am sure will have a material effect on the efficiency of your operations, yet unquestionably will affect your safety record as well:

- *Yellow sheet followup:* Do your crewmen follow up on yellow sheets to find what action was taken on their gripes? If they don't, does your maintenance officer hunt them down and tell them? Here is an opportunity for a "to the point" crewmen training program with dividends all around.
- *FOD program:* Does your unit conduct a walkdown of all hangar and line areas for possible FOD prior to commencement of flight operations each day?
- *Briefing:* Do you use a standard briefing checkoff list? Is it readily available in the readyroom? Does the SDO keep it current with weather, PIM, and other info? Do you have standard kneepad cards tailored to your briefing format so that items recorded are orderly and complete? Do you fly it the way you brief it?
- *Safety lectures:* Are they divided into basic categories by activity phase (e.g., taxiing, takeoff, in flight, landing)? Are they further subdivided into training phase (gunnery, bombing, etc.) so that proper points are emphasized in timely fashion?
- Do you require your crewmen to compute line speeds, deck runs, catapult gross weights, and other launch data or do they depend on other personnel to have the dope and keep them out of trouble?
- Do you have a periodic, written safety quiz and/or an "emergency of the day"?
- Do you walk through your spaces once or twice a day to watch your organization at work and meet your people?
- Do you customarily assign briefing topics to each of your officers for presentation during "All Officer's Meetings" or do your AOMs feature monologues by the CO, XO, and safety officer?

Before winding this up, I feel I should mention one source of personal pique: the so-called "meat axe approach" to safety where the threat of disciplinary action becomes a modern Sword of Damocles held by a fragile thread of whim to be exercised when an accident occurs. I feel that too often during past years the axe has been displayed as a prime method of getting the job done. Naturally, this action at any level carries through to the lowest levels below. You and I were selected for our jobs and our subordinates were selected for theirs only after being subjected to an intensive, exacting screening process. Let us at least have enough confidence in the screening process up and down the line to permit a man the latitude he needs to solve his problems. The time to use such tools as the disposition board is *before* an accident occurs, not after it. Let's devote our time and energies to perfecting our own operations in the hope that by so doing we may develop the wisdom needed to recognize trouble in its incipient stages.

One final word: how do you know whether you're doing the job you should? If your only measure of performance is your safety record, your mark can only be negative since accidents that don't happen don't hit the record. On the other hand, your failures are plain to see.

The only true evaluation of performance comes from your state of operational readiness – however measured. Almost invariably the highest states of readiness are characterized by low accident rates in those organizations where safety is viewed not as an end, but an inescapable byproduct of a sound doctrine, *formulated* from the best sources of knowledge and experience, flown as specified, and followed up continuously at every level to the most minute detail.

– Reprinted from NOV '70 APPROACH

Nostalgia. The February '82 issue of APPROACH published an article that related to days of yore. That article, this one, and the ones to follow are intended to emphasize that even though the aircraft are different and the people that fly and maintain naval aircraft come and go – the same problems remain. This article is 11 years old, but the message is as timely today. – Ed. ◄

Beware of Good Enough

By CDR Lawrence E. Gemma
HS-74

OVER 20 years ago my dad gave me the following poem that he clipped out of his company's sales magazine. It sort of set a standard for me that has assisted me through 7 years of active duty and 13 years in the Reserves, of which the last 9 have been in the same squadron. When I was younger, the term "good enough" meant that it was just a little past the unacceptable; and now, whenever I preflight or hear that sound that doesn't sound quite right, "good enough" means perfect or as close to it as possible. For all you "younger" aviators out there, please read this poem twice – the life you save may be your own. The author is unknown.

"What do you mean by *good enough*?"

My friend, beware of "good enough."
It isn't made of sterling stuff.
It's something any man can do;
It marks the many from the few.
It has no merit to the eye;
It's something any one can buy.
Its name is but a sham and bluff,
For it is never "good enough."

With "good enough" the shirkers stop
In every factory and shop.
With "good enough" the failures rest
And lose to those who give their best.
With "good enough" the plane breaks down
And we fall short of high renown.
My friend, remember, and be wise,
In "good enough" disaster lies.

With "good enough" have ships been wrecked,
The forward march of armies checked.
Great buildings burned and fortunes lost,
How can the world compute the cost?
In life and money it has paid
Because at "good enough" we stayed.
Who stops at "good enough" shall find
Success has left them far behind.

There is no "good enough" that's short
Of what you can do and you ought.
The flaw which may escape the eye
And temporarily get by
Shall weaken underneath the strain
And wreck the ship or car or plane.
For this is true; you should not bluff . . .
Only the best is "good enough."

Anon

By Maj John Danuser, ASO
VMA-214

IF you were to ask someone if he wanted to be killed or hurt, his answer would be no unless he is a masochist with a death wish. Likewise, if you asked if he wanted to intentionally kill or hurt someone else, the answer would be no unless he is insane or sadistic. No one in his right mind would want to kill or hurt someone intentionally. These are in themselves reasons to be safe, to be careful, to avoid accidents. Everyone seems to think that they are reasons enough. This is simply not true.

The incentive not to kill or hurt someone is not enough. If you do not believe me, think about this: people kill and hurt one another constantly. We are all humans, and humans are careless. We preach that if one is not careful, someone is going to get hurt. Everyone stresses safety and being careful. Everyone tries to be careful for the above reasons, but accidents happen again and again.

What follows is an example of negative reinforcement. The tangible rewards are negative, that is, they are reserved for wrong-doers. The typical human goes through most of his or her life without killing or hurting anyone. This, not being tangible, is taken for granted. Then something happens. Someone is killed or hurt and those involved receive a great deal of negative reinforcement. But what about the ones who were not involved? Where are the rewards for the GOOD GUYS?

We read about the action taken as a result of someone making a mistake or being careless and screwing up. We also read about the person maimed because he was careless. But, too seldom do we read about rewards for being careful. Sure, once in a while we read that a squadron achieved 1 or 2 years accident-free or that the squadron won an award for safety. But what about the individuals?

When a squadron earns the CNO Safety Award, for instance, who receives anything tangible? Who gets anything that they can carry with them, that they can be proud of, and feel some value or worth? Sure, the squadron gets a plaque that can be displayed in the readyroom. But when is it presented? Usually 6 to 9 months later, when half the personnel in the squadron may have changed. Besides, when do the people who break their necks day in and day out down in the pits get to enjoy or even see this reward? When they stand the duty and spend the night in the readyroom.

The only individuals who benefit in a tangible manner are the commanding officer, if his change of command does not take place before his squadron is selected, or the safety officer, if he is still in the squadron and his fitness report has not been written. But this article is not written for the sake of any CO or ASO; it is written for everyone in the squadron. Let's reward the GOOD GUYS.

How can we reward the individual for safety? We reward people for other things, so this should not be too difficult. Surely it is important enough to put some effort in that direction. With all the emphasis on safety these days, the word safe, or derivatives thereof, have to be considered complimentary. We should, therefore, use them in a complimentary manner. We must use every opportunity possible to make the words "safe," "safely," and "safety" words of respect and admiration. An evaluation written on anyone who has been careful and safe during the reporting period should describe the individual as such.

We should also praise those people who accomplish their jobs safely. Instead of just chewing out the careless, let's praise and compliment the ones who are careful. Instead of just punishing the ones who have accidents, we should reward the ones who don't.

What kind of rewards? Have you heard of a day off for being safe? Sure, people are given time off for doing a good job or doing more than what is expected of them, but how often is it associated with the fact that it was done safely? Too often we overlook the fact that job accomplishment was also **safe** job accomplishment. We should always recognize the individuals who are careful and safety conscious. Recognition must be in a form that means something to the individual.

When we total the number of people who do things carefully and follow safe and recommended procedures, we find they outnumber the careless, rule-breaking few we read about. Sure, we see an occasional Bravo Zulu and a Pro of the Week, but what about the individuals who do not find themselves in positions to be heroes? Where is their recognition? If not for them, we would need heroes every time we launch an aircraft, every time we perform maintenance, every time we operate a motor vehicle, every time we turn around . . .

I know that the present safety awards system was set up to enhance safety awareness and reward organizations which achieve good safety records by means of a good safety program. I am not proposing that the present system be done away with, but we need to recognize the individual because all it takes is one individual to foul up a good record.

We have all heard of Meritorious Unit Citations. What we need is a Safety Unit Citation. I recommend a unit citation which includes a ribbon to be worn by all individuals involved. This is something that will last and remind longer than words on a citation, and it becomes part of an individual's record. A ribbon is something tangible, something to show for one's effort, something one can be proud of forever.

It is a reward for the *GOOD GUYS.* ◄

This says it all.

THE following is quoted from COMFITAEWWINGPAC's Aviation Safety 01-82 message: "Officially, this Wing's goal for Safety Year 1982 is zero major mishaps, minor mishaps, and fatalities. Admittedly, statistical probabilities and past trends can be cited as perpetual stumbling blocks to the attainment of this goal. However, let me say that the safe conduct of our business is not dependent upon past statistics or luck. Instead it is extraordinarily dependent upon several factors, chief among which is an attitude of personal accountability, responsibility, and survivability. This safety attitude translates directly into actions necessary to prevent accidents.

"If you don't think safety is attitude dependent, then ask yourself this question: 'What kept nearly 80 percent of the squadrons in this Wing mishap free during 1981?' If your answer is good fortune, their number hasn't come up, or they are just riding a crest, then you are due for an attitude check. These squadrons have the answer. It's the concept that I (me) am responsible for what I do, for how I act, for how I maintain, and for how I fly the aircraft, and not you or someone else, or the shop supervisor, or the other guy.

"This concept is attainable through your individual and personal commitment to do the job right. Expediency, operational pressures, exigencies, and the infamous 'can-do' spirit are not acceptable as substitutes for prudence, sound judgment, and common sense." ◄

A Four Pac to (Bin)go

WE arrived at the hangar early for a 0730 brief for a fly-on to the boat. After having completed one final night of liberty in NAS West Pac, all eight aircrews are bright eyed and bushy tailed. Hung over? No way, pal! That's a violation of OPNAV; besides, who wants to be a permanent walk-aboard for the rest of the cruise? Eight hours sleep? You bet, more like 10 or 12 in some cases! Well-nourished? None better, only 62 more NAS West Pac hot dogs to go for that centurion patch.

We check the weather at the field, our alternate, the ship's OPAREA, and all forecasts are the same. The outlook is marginal at best. 4 SCT 15 BKN RW/TRW in the vicinity. Heck, the ship had trouble leaving the pier.

During the brief, an A-6 aircrew is preflighting and manning during a torrential downpour. They're not fighter jocks, but they sure have guts. At approximately 0900 the all-weather (no kidding) *Intruders* launch. The *Corsairs* follow suit at 1030 and taxi for the hold short, only to return at 1100. One head may be better than two. Nobody is going anywhere in weather like this, except the *Phantoms*. The ship wants us now. With the gung-ho attitude characteristic of fighter crews, we march proudly to our awaiting F-4s. The 3 inches of standing water lapping at our shined boots doesn't bother us. Duty and honor over good sense. Just hope our FLU-8s don't activate.

Four aircraft taxi for takeoff with 10 minutes separation. *Phantom* No. 1 rolls at 1210, no problem; he's airborne and in the goo. Number 2 follows approximately 10 minutes later, finding a small nosewheel steering problem on the roll – he has none. No sweat, there are four sets of short field gear at the destination. Just lower the abort speed a bit. Numbers 3 and 4 follow shortly thereafter and join *Phantoms* 1 and 2 attempting to hold overhead USS BOAT at 15K as instructed. Sorry, Marshal, but that thunderstorm is in the way. We'll move it out here to the 150 at 30 while you find the wind. Guess they didn't want the *Phantoms* after all; the A-6 tankers are all heading back to the beach on a 20-mile bingo profile. The A-7s, not to be outdone, follow the *Phantoms* into the air and are marshaled in the thunderstorm. It's okay, they have INS. Their Pirep is informative: "The weather here is rotten, move the stack back to the one five zero or thereabouts." The plea fell on deaf ears and the *Corsairs* sustained significant hail damage.

After holding for a little over 1.5 hours with no Marshal instructions or expected push time, No. 4 is bingoed with 4.8 (sorry, we *weren't* ready for you) to an NAS West Pac liberty port. Destination weather is observed as 8 SCT with light RW, *intermittent* VFR.

Number 4 pushes from altitude on vectors to a downwind entry into the GCA box pattern. Later, with 2,500 pounds, No. 4 goes missed approach at 200 feet without the runway environment in sight. The actual weather at the field appears closer to 600 feet BKN and one-fourth mile visibility and driving rain. Number 4 sees the runway as he flies over it and attempts a visual circle to land. About halfway through the crosswind turn the airfield is lost with land visible directly below. Using familiar "gouge" points, he tries an FOLP pattern (600 feet AGL) approach. Past the 45 both aircrews pick up *unfamiliar* ground cues too close to the aircraft and elect to wave it off and head for their only divert. Number 4's fuel state is hovering around 1,880 pounds, and presto, the low-level fuel light illuminates. Number 4 declares an emergency and climbs to 7 K.

Meanwhile, No. 2 had left the Marshal gaggle with 5.3 and headed for the primary divert. After switching to approach frequency he is vectored hither and yon, while waiting for the outcome of No. 4's approach. When No. 4 goes missed approach, No. 2 breaks off his vectors at 3.5 and heads for the alternate. Misery loves company.

Phantom No. 1, not far behind, leaves the stack with 3.9 headed for NAS West Pac. Finally on a straight-in to Runway 07, option to circle for 25, No. 1 asks for divert weather. "Secondary divert is closed" was the dismal reply, "and we're now below circling minimums. Continue for 07." At 4 miles, precision approach radar reports contact was lost in heavy weather. Number 1 is issued instructions to perform a right 360. Halfway through the turn, the rain finds its way into the wire bundles and beats the fuel gauge and radar altimeter into spinning submission. Completing the 360-degree turn with a low fuel light, No. 1 is told that the PAR is now down and to intercept the final portion of the TACAN, for which he is currently 500 feet above parameters. Closely monitoring his fluctuating altimeter and VSI (variable static pressure in the water system?), he descends to a semblance of an MDA in hail, turbulence, and heavy rain and goes missed approach with "corner reflector out" light (250 KIAS speed limit). At least No. 1 can estimate how little fuel he now has, 500 pounds less than No. 3, who had to sequence behind him. Number 1 declares an emergency, considers what may be the world's first bingo *to* a ship, but is informed by approach that the alternate will open in 3 minutes. It was closed due to "other" emergencies in progress, not weather! Guess it pays to

ask "why" now and then.

Lo and behold No. 3, who also started his 20-mile bingo at a "fat" 3.9 on the gauge, gets his turn in the T-storm. As No. 1 executes his approach, No. 3 is required to maneuver for spacing. He is also told that the PAR is up, alternate is closed, and to set up for an approach to Runway 07. He's at 6 nm when the precision radar dies. He attempts the same TACAN approach from the same position with the same results as No. 1, but in heavier hail. He executes the missed approach, gets a functional check on the low fuel light, and is off to the most popular alternate around.

As No. 1 goes missed approach, No. 4 is on radar final requesting an arrested landing at secondary divert. Number 4 has approximately 8 minutes of fuel remaining and really can't afford to go around, certainly not for a fouled chute. Number 2 is close behind with low fuel, and requests that No. 4 *not* take a trap. Guess No. 4 will take his chances with standing water on the runway. No report on braking action. On rollout, with a good chute, No. 4 has a nice ride with some hydroplaning, some slip and slide, but manages to keep it on the runway.

Number 2, close behind, can't trap because No. 1 is pressing him from behind. What, no nose gear steering? Funny how these things pop up in the rain. Son of a gun, a fouled chute on rollout. Good thing the Air Force owns a lot of concrete. Almost stopped, almost safe, No. 2 does an uncommanded 180 degree at taxi speed. Call a tow tractor, saved by 2 feet of pavement. Vectors to a 2-mile GCA final, runway in sight, No. 1 is *really* shy on fuel and asks for a trap. Sorry, No. 3 is hot on your heels with only half a grand more in the tanks than you. No problem on rollout (slide-out) for No. 1. (At least he's not off the runway.)

Number 3, the last *Phantom* on final, burning fumes, is afforded the barrier. Four on deck, nothing broken, if you don't mind a little hail rash.

So what's the final fuel tally on landing? Number 4 has 800 pounds; No. 2 has 1,300 pounds (fat city); No. 3 has 400 pounds; and No. 1 isn't so sure any more. Gosh, and NATOPS says 2.0 is a low fuel state for a *Phantom.* Let's save "ole" Grampaw Pettibone the trouble. "Jumpin' Jehosephats! What were these young lads doing?" Getting bingoed from the ship after holding for over an hour and a half, to an IFR divert, and landing at the divert's divert with not enough fuel to turn a huffer.

To conclude, it appears that all eight of these aviators, along with untold numbers onboard a boat, and at an NAS, painted four F-4s into proverbial boxes. The initial reaction of the squadron CO must have been anger, four out of four on the beach. But after the story unfolded, I'm sure his final reaction was one of relief. ◄

You can't legislate safety!

ONE of our greatest Americans, Benjamin Franklin, wrote that he once began a program designed to eradicate all of his vices. His technique was simple: concentrate on one particular vice until it is eliminated and then start on another. By doing this he expected to be able to improve himself within a short time. Unfortunately, he found that a vice once vanquished did not always stay conquered but could and would reappear when he let his guard down. He was unable to devote sufficient attention in the many directions required to effectively combat all of his vices at once. This experience of Ben Franklin's with his personal vices has direct application to the safety officer's job: the prevention of mishaps.

It has often been said that there are really no new accidents, and this is generally accepted as true. The second half of that axiom is we just keep on thinking up new ways to repeat the same old mistakes, and that is a key to the prevention of mishaps. When investigations point to materiel fixes, we implement the solution. When investigations point to human error, we often find the particular solutions difficult to pin down. We do attempt solutions, often in the form of rules for crews to follow, but like Ben Franklin, to attain perfection we would soon find that we don't have the capacity to pay sufficient attention to all the rules required. If rules cannot be the total answer, then what else is available?

One of the chief strengths of any aviator must be his ability to think in the air. Professionalism is another word for that ability, and **that** must be the target of the safety officer. His mishap prevention tools cannot be hit-or-miss rules that last until the next change of command, but must be a directed set of programs designed to foster professionalism in the face of its enemies: complacency, carelessness, and ignorance.

The job of the safety officer is not easy. The tasks are not well defined and the results are difficult to quantify. Some general guidelines are:

- Aviation safety is a growing field, and the amount of information available to the ASO is tremendous. Use your resources wisely.
- The ASO must apply his knowledge to the task requirements to produce meaningful programs. What programs? Some examples: aircrew training, systematic followup of hazard reports, safety surveys, mishap trend analysis, safety information dissemination, program feedback.
- Once produced, such programs take time to become established. Good safety programs don't happen overnight. It takes use to make them work.
- Once established, safety programs must receive continued support. Without continuity, safety programs lose their effectiveness. Keep working.
- Finally, the job of ASO is never a permanent assignment. To ensure long-term continuity and prevent duplication of work, the safety officer must provide for adequate turnover from one ASO to the next.

Rules and restrictions have a place, when situations that commonly produce mishaps can legislatively be prevented. But remember the old saying, "There are no new accidents . . ." The **real solution** lies with our professionalism as aviators. Ultimately, you can't legislate safety. It's a full-time job of awareness for everyone. The goal is **safety through prevention, not investigation.**

– Adapted from HOT DOPE SHEET, 2d Marine Aircraft Wing

CV BINGO — SUPPORT = MISHAP

By Russ Forbush
APPROACH Writer

WHAT follows are the final radio transmissions between NAS East Arrival Control and an ALF tower just prior to the tragic crash that will be reviewed in this article.

Arrival: ALF Tower.
Tower: This is ALF, go ahead.
Arrival: What's your weather?
Tower: The same as yours. It's just wet and rainy, that's it.
Arrival: Roger that.
Tower: Go ahead.
Arrival: Okay, we've got an F-4 passing over the top of you right now. He's emergency low fuel and will trap at ALF.
Tower: Roger.
Arrival: Okay, you ready for him down there?
Tower: Roger. We got all the trucks standing by and everything. Is he gonna come on Runway 5, or do you know?
Arrival: I believe Runway 5.
Tower: Roger, thank you.
Arrival: Paddles, Radar.
Tower: No one's in paddles; this is ALF.
Arrival: ALF, did that airplane trap?
Tower: Hey, stand by... Roger, we've got a *Phantom* on fire here at ALF.
Arrival: He's on fire? Is he on deck?
Tower: He's on deck, on fire. He's at the approach end of Runway 5.

The mangled mass of metal that was once an F-4 had crashed short of Runway 5, fatally injuring the Category 1 RP/RRIO team that had comprised the aircrew. What combination of circumstances had contributed to this mishap?

The chain of events commenced the night before the crash. The mishap crew had completed four CARQUAL landings when they were Bingo'd to the beach because the CV was having aircraft starting problems. They departed in their F-4 about 2120 and arrived back in the squadron readyroom at 2217. The CDO informed them that they were scheduled for a 0530 brief the following morning and were to launch in time to be overhead the carrier at 0645. Both crewmembers departed the squadron area about 2230 and hit the sack some time after midnight.

The RIO arrived in the squadron readyroom at 0533 the next day. The pilot was about 5 minutes late for the brief. In his haste to get to the squadron, he had been stopped twice by the local police for speeding. Neither crewman had slept for more than 4 hours and 15 minutes. (OPNAVINST 3710.7K specifies that minimum ground time after flight operations should be sufficient for flight personnel to eat and obtain at least 8 hours of uninterrupted rest.)

In addition to the mishap crew, three other crews were scheduled for the flight to the CV for CARQUALs. Following the operational brief, a weather brief was conducted. Present weather was partial obscuration, 2,000 feet scattered, 3,000 feet overcast, 4 miles visibility in fog. Actual weather at takeoff was 4,000 feet overcast with light rain.

The flight of four F-4s checked in with the CV at about 0635 and were directed to high holding at 17,000 feet MSL. Shortly after 0730, the CV decided against recovering the *Phantoms* and all were Bingo'd to NAS East, heading 290/46 miles. At 0738, the mishap F-4 was shifted to a local GCI site which then handed them off to NAS East Approach Control. Approach passed the weather, lost communications and missed approach procedures, and informed the aircraft that traffic was holding overhead (an A-6 with malfunctioning landing gear). The weather had now deteriorated to 700 feet broken, 2,300 feet overcast, 4 miles visibility in light rain and fog.

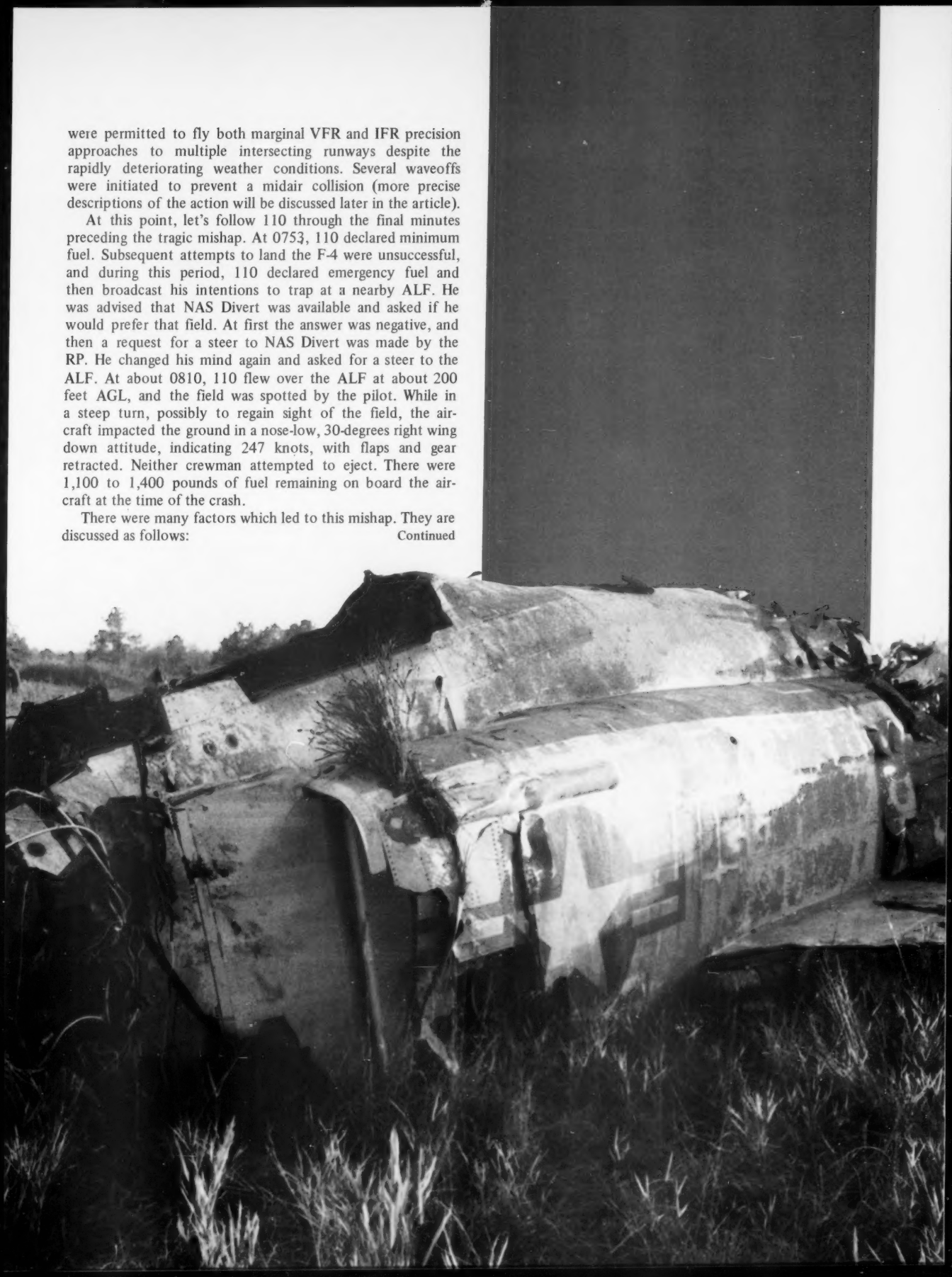
At this point, it becomes necessary to identify the players. The *Phantom* side numbers (fictitious) are 101, 103, 105, and 110 (mishap aircraft). Between 0743 and 0810, mass confusion existed at NAS East between Arrival Control, Tower, and the four F-4s (the A-6 was able to make an arrested landing on Runway 32L at 0752). The *Phantoms*

were permitted to fly both marginal VFR and IFR precision approaches to multiple intersecting runways despite the rapidly deteriorating weather conditions. Several waveoffs were initiated to prevent a midair collision (more precise descriptions of the action will be discussed later in the article).

At this point, let's follow 110 through the final minutes preceding the tragic mishap. At 0753, 110 declared minimum fuel. Subsequent attempts to land the F-4 were unsuccessful, and during this period, 110 declared emergency fuel and then broadcast his intentions to trap at a nearby ALF. He was advised that NAS Divert was available and asked if he would prefer that field. At first the answer was negative, and then a request for a steer to NAS Divert was made by the RP. He changed his mind again and asked for a steer to the ALF. At about 0810, 110 flew over the ALF at about 200 feet AGL, and the field was spotted by the pilot. While in a steep turn, possibly to regain sight of the field, the aircraft impacted the ground in a nose-low, 30-degrees right wing down attitude, indicating 247 knots, with flaps and gear retracted. Neither crewman attempted to eject. There were 1,100 to 1,400 pounds of fuel remaining on board the aircraft at the time of the crash.

There were many factors which led to this mishap. They are discussed as follows:

Continued



Crew Rest. This crew had no more than 4.5 hours of rest and had been away from the squadron area for a maximum of 7 hours prior to brief. This breached the intent of both OPNAVINST 3710.7K and squadron SOP.

Command and Supervision. The squadron erred by scheduling this inexperienced crew for CARQUALs without sufficient time for proper rest.

Weather. The original forecast weather for NAS East called for IFR, but with the lowest ceiling near 1,000 feet broken and reduced visibility in light rain. Later the weather deteriorated to the point where it was actually below IFR minimums for NAS East. With a large number of aircraft awaiting landing, this created a dangerous situation.

NAS East Tower. The tower erred by allowing both marginal VFR and IFR precision and ASR approaches to multiple intersecting runways despite the rapidly deteriorating weather conditions. The tower had rescinded permission for straight-in approaches when the field went IFR but allowed 103 to complete an uncontrolled approach to 32R. This necessitated waving off 110 on his first precision approach, to avoid conflict with 103. After 110 was waved off by NAS East Arrival Control during a straight-in to 32R, ALF Tower accepted control of 110 from Arrival Control, even though 110 did not have the field in sight and the tower did not have 110 in sight.

Other Aircraft. The A-6 complicated the recovery of the *Phantoms* by declaring an emergency with 45 minutes of fuel remaining, not complying with tower altitude clearance, and getting in the way of 103.

Mishap Aircrew. The first significant error occurred when the crew failed to immediately react to the deteriorating weather with a prompt divert to one of two suitable military airfields within 25 nm of NAS East. Both crewmembers had seen the ALF during two previous instrument approaches to NAS East. While holding over the ALF, at 0752, *Phantom* 101 reported the field VFR. Later, 101 was vectored to NAS Divert, where a successful landing was accomplished. The VFR report undoubtedly led the crew of 110 to believe it was still VFR there at 0810, despite the rapidly deteriorating local weather during their three instrument approaches to NAS East. The crew failed to report their remaining fuel in minutes after minimum fuel was declared and continued to follow Arrival Control and Tower instructions until a *bona fide extremis* fuel situation existed. Crew confusion was evident from the time 110 committed to divert. They were unable to identify NAS Divert by its field name, were undecided on NAS Divert or ALF as destination, made repeated emergency fuel calls, varied from the heading of 320 degrees assigned by Arrival Control, and were unable to obtain visual contact with ALF until descending to 200 feet AGL. The crew's last judgmental error was to continue visually to an uncontrolled, no-NAVAID ALF, in IMC. This involved attempting to execute a maneuver with a bank angle of up to 60 degrees at low altitude, from which recovery was unsuccessful.

The combination of deteriorating weather, inadequate crew rest, other aircraft, and a definite lack of proper assistance from NAS East Arrival Control and Tower put the crew at a distinct disadvantage. Their lack of experience and desire to complete the landing apparently prompted them to press on without challenging their controllers. This story should serve as a grim reminder to all of those who man and control aircraft that SOP, NATOPS, OPNAV directives, and ATC procedures must be adhered to by each member of the team if similar mishaps are to be prevented. ◄

A-7E In(di)gestion

By Richard A. Eldridge
APPROACH Writer

IT was the first event of the day and the aircraft director had positioned himself 5 feet abeam the port side of the A-7. He was slightly forward of the cockpit boarding ladder, with his back to the aircraft.

The plane captain was inspecting the nosewheel, and a flight deck troubleshooter was standing approximately 15 feet in front of the A-7. The pilot was conducting his pretaxi checks.

Both the troubleshooter and the plane captain noticed that the director was talking on his headset as he turned toward the aircraft. He stepped directly in front of the jet intake and was ingested. The plane captain and troubleshooter immediately grabbed the director's legs and pulled him from the intake. He was extremely fortunate that he was saved from injury by the actions of two quick-thinking and quick-reacting shipmates.

The A-7 NATOPS warns that personnel within 15 feet of an A-7 at IDLE power or 25 feet at MILITARY power are susceptible to ingestion and possible severe or fatal injury.

Supervisory personnel are positioned near the intake danger zone and are required to continuously display the start engine signal depicted in the CV NATOPS Manual. Even though this was done, it did not prevent this mishap from occurring.

The CO commented: "Complacency on the flight deck and a Corsair are a fatal combination. Had my troubleshooter and plane captain not risked their own lives, this yellow shirt would have been a statistic."

"It didn't feel right."

By CDR M. G. Shaw
VA-146

CONVERSATION at the maintenance control desk following a recovery:

Pilot: Chief, that throttle didn't feel right in 302.

Chief: How about we have the next pilot check it? I really need that bird for my next go.

Pilot: Well, it didn't feel right, but okay.

That is one way the situation could be handled. But one day that kind of pilot debrief and maintenance management will jump up and bite you. Both parties are to blame: the chief for pushing to turn the bird around; the pilot for not investigating the problem more and giving a proper debriefing of the discrepancy. There are many times that pilots have "felt" things were not quite normal, probably more than are brought to anyone's attention, if the truth be known. But how these kind of "it didn't feel right" gripes are handled is what makes the difference between a safety-conscious squadron and one that is just after flight-hours.

In our squadron I would like to think that difference is why we are still accident-free after 9 years and over 46,000 flight-hours. Everyone has heard that, but what most don't know is that the command has flown over 116,000 single-engine aircraft mishap-free flight-hours since the last maintenance-related mishap. Here is how the conversation really took place.

Pilot: Chief, the throttle on 302 doesn't feel right airborne.

Chief: Can you give me some more information?

Pilot: It seems to require about a 2-inch forward position from where it normally is for cruise airspeed. Also, the last three-fourths inch to 1 inch of travel gives 3,000 - 3,500 pounds fuel flow increase.

Chief: We need it for the next go, but down it and we'll check it out.

The aircraft was immediately put in work to ascertain what was causing the problem. Five hours later, after much searching and following linkage rods, the discrepancy was discovered. In 8 hours the aircraft had been properly fixed and returned to an up status. The cause was worn bushings in the trunnion assembly.

The point that is important to stress here is that if "it doesn't feel right," it probably isn't. If you are the salty old veteran of 4,000 flight-hours, maintenance tends to respect your comment that it is not right. What if you are the new guy, fresh from the RAG, and you have not been aboard long enough to even be assigned a collateral duty? You checked in thinking you were the cream-of-the-crop from the RAG, and now you realize there is one heck of a lot the RAG did not have time to teach you. Do you pass off the writeup of a discrepancy because you figured it was just you? I sure hope not.

Take the time to find out why things feel differently. Try to write down as many specifics on your kneeboard as possible. Then when you return, debrief a maintenance troubleshooter thoroughly. If you do not know something about the system in question, ask the troubleshooter. He is a specialist and you might just add to your professional knowledge. At this stage of the game, there are no dumb questions.

When you have finished debriefing the troubleshooter, do not stop there. Start asking questions around the ready-room. Surprisingly, the same thing might have happened to someone else before. If not, then maybe they can learn from your experience. We are all here for the same reason. We all have the same goal: readiness through safety. Next time "it doesn't feel right," say so! ◄

letters to the editor

P-3C Boarding Ladder Safety

NAS Jacksonville – While disembarking passengers in an air terminal area, the flight crew of the P-3C were interrupted by the surprising news that one of the passengers had fallen down the aircraft ladder. The No. 3 engine was secured and all personnel rushed to aid the injured man. He appeared to be severely injured, and emergency crews responded in a timely manner. He had suffered a skull fracture and several broken ribs. After several days at the naval hospital he was released.

The aircraft boarding ladder was in safe condition with all nonskid installed. While disembarking, the elderly passenger carried three small suitcases; he fell because one caught on the side of the ladder handrail. Although crewmembers were available to help with luggage, the man grabbed his bags and exited the P-3 so quickly that they were unable to render assistance.

All squadrons operating P-3 aircraft routinely embark passengers and accordingly must recognize the hazards involved to non-flight trained personnel. The following suggestions should be considered for all non-transport naval aircraft which frequently carry passengers:

- Passengers should be briefed not to leave aircraft until instructed to do so by a competent crewmember.
- P-3C passengers should be briefed that low gross weights usually result in rather steep ladder angles.
- A crewmember should be stationed at the bottom of the ladder when passengers disembark.
- Only one bag should be carried at a time to allow the passenger to use the handrail.

Be safe – don't be a fall guy!

AD1 R. A. Rees
VP-56 Safety Petty Officer

Stopping the A-7

Lemoore, CA – Alpha damage/injury mishaps are not limited solely to the "smoking hole in the ground." They can occur just as easily by losing control at low speeds and departing the runway or taxiway somewhere other than at an authorized point – a lot less spectacular, but the results are still bad.

The *Corsair* has been notorious for marginal braking/handling, particularly under wet or adverse runway conditions. One must surmise that a goodly number of mishaps occurring during this final phase of flight are generated by deviation from NATOPS and/or lack of planning.

The A-7's high lift wing keeps forces on the tire low while the aircraft is above 100 knots, in addition, at high speeds, the tire "footprint" is also reduced. The net result is that very little braking can be applied without risk of locking a brake or blowing a tire. As the aircraft slows, more weight is applied to the tires, the "footprint" increases, and more heat (braking) can be applied. The bottom line: stay off the binders until speed has decreased sufficiently to allow effective braking (90± 10 knots). Use of antiskid is required for all shore-based landings, affords the A-7 driver the reduced possibility of locking a brake, and allows optimum braking under all runway conditions. It's a fine system, but you won't have logged too many hours in the machine before the "anti-skid" caution light illuminates concurrent with its selection. It could be after 3 months of disuse during cruise on a divert to your first field landing in many months. To add night rain, no arresting gear, and 8,000 feet would be cruel, so I won't. When you begin to use up your options and you are running out of JP and ideas, stick to the published procedures.

- burn down
- fly a normal approach
- throttle to IDLE on touchdown
- smoothly increase back stick to attain approximately 20 units AOA, but never exceed 21 units AOA
- as the nose falls through, maintain full aft stick and do so for the entire rollout
- passing 90 knots, apply steadily increasing constant brake pressure

Three important points to remember: after touchdown, *ease* the nose to approximately 20 units and hold this attitude with full aft stick until the nose falls through. Care should be taken not to "snatch" the nose up – you'll have a good chance of overshooting the desired angle of attack and "skagging" the tailcone or momentarily becoming airborne again. In that case, you have already generated work for the ASO, and you haven't even *begun* to apply the brakes. Continue holding full aft stick (don't trim into the aft stick – marginal "go around" UHT position results) to keep that UHT producing drag. NATOPS strongly encourages arrested landings whenever wet or adverse runway conditions exist.

Know your aircraft and the limitations. Anticipate those "nice to have systems" being inoperative. Most important, formulate a plan *before* you need it, then *stick* to it. Watch the skipper and ASO smile.

LCDR J. B. Sandkop

APPROACH is always interested in contributed articles and photos. To save you time and increase the chances of your contribution being published, we have printed a Contributor's Guide. For a free copy of this handy booklet, please write to: Naval Safety Center, Safety Publications Dept. (Code 7531), NAS Norfolk, VA 23511 or call Autovon 690-1321.

Squadron's Best Pilot

Pt. Mugu, CA – How many times have you read in the commanding officer's MIR endorsement, "He was my best pilot!" Just what is the definition of an exceptional pilot or the squadron's best pilot? I believe that all too often he is perceived as the pilot who possesses superior "motor skills" and flies the aircraft as if it were an integral part of himself. He is the one who can bring it aboard under the most adverse conditions, can fly the lowest and fastest sandburner routes, and land in the most inclement weather (even when the field is below minimums). He is the top gunner, top bomber, top everything. However, he may also be the individual the skipper labels as "one of his best pilots."

Although I may be branded for heresy, I believe the best pilots are not necessarily the ones with the superb "motor skills" but are the ones who consistently demonstrate sound judgment, adherence to NATOPS procedures, and recognize and accept their limitations and abilities. The profile of the best pilot in the squadron is that individual who exhibits flight discipline, maturity, and aeronautical professionalism. He may or may not possess gifted exceptional motor coordination, but does display the technical background, maturity, and skill to understand and to properly employ the sophisticated weapons systems and aircraft provided him. He is not the one who will bust minimums just to get home, or the one who has to push it a little further for his own ego, or grandstand for peer approval.

Lives and aircraft are too valuable to lose at the rate we in naval aviation are destroying them. As pilots, each of us must conduct a self-examination and strive to truly be as professional as we can and accept nothing less. Let each commanding officer accept the challenge to fully understand the character of each pilot under his command and to motivate and direct him to use his skills in the most professionally aggressive and safest manner possible.

CDR D. R. Zinger

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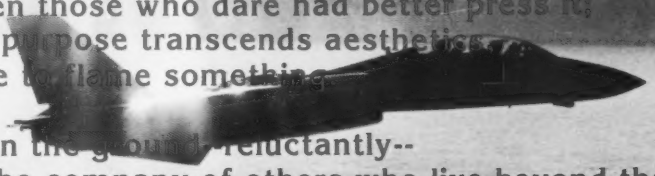
Fighter Pilot

You can't come here, groundling,
I dwell in space so foreign
That even though you stare at it
You will never taste it.

While you are simpering over your greasy eggs,
I am climbing out at a hundred percent,
In burner,
Nose boring through the cold, blue-black air.
While you shave,
I make the sun rise and set again
With a touch of my gloved fist on the stick.

I can't see you down there
Locked inexorably in the twisting mosaic beneath my wing.
You can't see me up here;
You don't tread among the gods.

This is a closed shop.
Only those who hack it are allowed,
And even those who dare had better press it;
For my purpose transcends aesthetics--
I'm here to flame something.



When I am on the ground, reluctantly--
I seek the company of others who live beyond the edge.
If I seem aloof and haughty,
Call it honest arrogance.

Marshall Lefavor

WORTH REPEATING

A near miss is almost a good hit.

George Carlin

Naval Safety Center
NAS Norfolk, Virginia